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CONCEALED TUBERCULOSIS
OR
"THE TIRED SICKNESS"

HEAD

Concealed Tuberculosis
or
"The Tired Sickness"

A Clinical Study upon the Exhaustion Type of Hidden Tuberculous Infections

BY
GEORGE DOUGLAS HEAD, B.S., M.D.

"God screens us evermore from premature ideas. Our eyes are holden that we cannot see things that stare us in the face until the hour arrives when the mind is ripened, then we behold them, and the time when we saw them not is like a dream." EMERSON.

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PREFACE

For a number of years the writer has recognized in his hospital and private practice a form of long standing physical and nervous exhaustion, associated with the presence of the tubercle bacillus tucked away in some organ or tissue of the body. This slow-burning fire of a low-grade tuberculous infection manifests itself in such an insidious manner as to escape detection by the usual clinical methods of diagnosis employed; and the stamp of neurasthenia or nervous exhaustion is usually placed upon those persons so affected. This type of tuberculosis fails of recognition unless the specific tuberculin tests are used to assist in establishing the nature of the infection.

I first began the use of Koch's old tuberculin subcutaneously, for diagnostic purposes, in the year 1895. Since that time I have tested more than one thousand persons suspected of harboring either pulmonary, pleural, glandular, peritoneal, bone or joint tuberculosis in so insidious a form as to require a specific test to establish the diagnosis. In this group were many persons complaining of symptoms expressing lowered vital force and lack of endurance, for which no satisfactory causal factor could be detected,—no syphilis, no myocarditis, no

endocarditis, no septic infection, no malignant disease, no exophthalmic goiter, no nephritis, no gastric ulcer, no anæmia. I found, however, that when these patients with doubtful or negative clinical signs of tuberculosis were tested with tuberculin, many of them gave positive reactions. This evidence clearly proved that many persons complaining of symptoms indicative of unstable physical and nervous states and diagnosed as neurasthenia carried a tuberculous infection. Inasmuch as these persons harbored no other organic disease, the conclusion was forced home upon one that the tuberculous infection was the cause of their symptoms.

No argument should be needed to convince the reader of the importance of the subject. The diagnosis of neurasthenia, asthenia, nervous exhaustion, effort-syndome, or psychasthenia which is often made upon persons who consult the clinician complaining that they are "played out," and whose symptoms of weakness and tire are created by the presence of the tubercle bacillus in the body, is a grave matter not only to those who suffer but also to the physician whose function is to detect disease and to help nature in the repair of its damaging effects.

The failure to interpret these cases correctly is due to two causes: a lack of appreciation of the fact that the symptoms expressed in this enfeebled state of body and mind may arise from a tuberculous

infection and, second, the aversion which many physicians have to using a specific test,—namely, tuberculin subcutaneously, for fear of disseminating the disease. I wish to state here that from a large experience extending over many years, with abundant opportunity to watch patients so tested from year to year, I have never observed any evidence to prove that tuberculosis was disseminated by the use of tuberculin subcutaneously but, on the other hand, have a firm conviction that this diagnostic test with a good reaction has a healing effect upon the lesion in its insidious and low-grade forms. It is my purpose in this study to describe more fully than I have heretofore done this clinical form of tuberculosis, to which I have also given the name of "The Tired Sickness." I hope this presentation of the subject may shed some light upon a hitherto dark chapter in clinical medicine.

GEORGE DOUGLAS HEAD.

MINNEAPOLIS, MINN.

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CHAPTER 1

INTRODUCTION

"Doctor, I am so tired and played-out. It seems to me that I have been so ever since I can remember. What is the matter with me that I can't do the things that other people do without becoming exhausted? Why am I so good for nothing? Everyone tells me that I am nervous. My doctor has examined me thoroughly and can find nothing wrong. He says that I have neurasthenia and that if I would forget myself and occupy my mind in some interesting work, I would be well. But I have tried oh, so many times and it always ends in this played-out state of body and mind. Will you not please give me an examination and see if you can find anything wrong?"

With this all too familiar story our patient with "The Tired Sickness" often begins the history. What an interesting picture presents itself! One notes a bright young man or woman with clear eyes and an intelligent, interesting face; the lips quiver as the symptoms are told; tears welled from the eyes as, with earnestness, detail after detail of the long story is unfolded. The complaints are many and varied. They are, however, described by the

patient with exactness and have continued often over years of time,—the lack of endurance under physical or mental strain, the spells of weakness, the repeated rest-cures, the aching in the neck, the fleeting pains through the chest now in one place and now in another, the cold hands and feet, the backache, the periods of mental depression, the lack of appetite, the progressive loss in weight, the irritability of the stomach, the huskiness of the voice, the voice-tire after much talking, the headaches when tired, the "let-down played-out" feeling after meeting people, the disturbed dreams and restless sleeping, the necessity for long hours of rest, and the inability to take much exercise without fatigue.

The doctor listens attentively and sympathetically to the long story. He says to himself, "Surely there must be some good reason for these symptoms expressing this long standing lack of strength and vital force." He takes up the study of his case with enthusiasm and thoroughness. The family history reveals apparently nothing of importance. The mother or father perhaps died of tuberculosis when the patient was a mere child, or an aunt died of the disease at the patient's home when the patient was small. An attack perhaps of left-sided pleurisy occurred at eight years of age—nothing more. The physical examination is searching, but no satisfactory cause for the symptoms can be found—no syphilis, no apparent tuberculosis, no heart disease, no anæmia, no gastric ulcer, no hyperthyroidism,

no septic foci in teeth or sinuses. The tonsils had been removed years before. There is trembling of the eyelids with the eyes closed. The finger-tips show a fine tremor when the fingers are extended and spread apart. The temperature is 99.2 degrees; the pulse a trifle fast but regular, and of fair volume. The blood-pressure is low, perhaps 100 systolic, 70 diastolic. The Wassermann test is negative. The blood findings are of no significance. The neurological examination reveals no evidence of organic disease. The history and the examination point usually to an intelligent young person, rather under-nourished, who has related a long story of disjointed symptoms for which no adequate cause can be discovered, who is unable to stand up under the wear and tear of life, and who must constantly protect himself or herself against fatigue of body and mind. The diagnosis is clear. The patient has neurasthenia. "But, Doctor," the patient answers, "you say it is my weak nerves. If only you could find something really wrong with me, some tangible explanation for this feeling of exhaustion which comes over me and makes my life one constant struggle against a force which is sapping my strength, I could fight a good fight. What can I do? Must I live in this weak, feeble condition the rest of my life without hope?" "Oh, No!" the doctor replies, "It is quite probable that after a number of years you may be much better. Your later years will very likely be your best. It is a matter of time and

patience, but there is nothing now to do except to live within the income of your strength. You have no organic disease."

And so the physician, overlooking that little incident of the parent or the aunt with pulmonary tuberculosis in the father's home when the patient was a child, and failing to exclude a tuberculous infection by the use of the tuberculin tests, consigns this individual, suffering from a concealed form of tuberculosis, as truly sick as a patient with typhoid or malaria or syphilis, to the class of the nervously exhausted. In the study of this patient, not all the diagnostic resources furnished by scientific medicine have been utilized. We have tested our patient for lues with the Wassermann reaction, but we have failed to use the specific means for detecting the presence of tubercle bacilli in the human body. The most common of all chronic diseases causing low-grade forms of physical weakness and nerve-exhaustion to which man is subject we have failed to exclude, and yet we have stated to our patient that no disease can be detected to explain the symptoms.

The close relationship between neurasthenia (so called) and clinically recognizable tuberculosis has long been known and described. Stiller (Die Asthenische Konstitution Krankheit) devotes a whole chapter to its consideration. Various writers upon tuberculosis, notably Lawrason Brown, have emphasized the presence of the neurasthenic state

in tuberculous individuals. It is not my intention to discuss the relationship between neurasthenia and clinically demonstrable tuberculosis, nor do I intend to consider the cases of clinically recognizable tuberculosis presenting exhaustion-symptoms. This well-known relationship serves, however, as a powerful argument for the views here presented. If so widespread a disease as tuberculosis manifests in its clinically recognizable forms the symptoms of weakness and exhaustion expressed in the term neurasthenia, how large a number of persons harboring the unrecognized silent forms of the disease there must be, in whom the only evidence of the infection consists in the symptoms expressing lack of physical endurance and inability to stand up under the wear and tear of life.

Tuberculosis, like its great rival syphilis, presents itself in a variety of clinical pictures. One of its peculiarities is the tendency which it often manifests to invade its host without causing much constitutional or local reaction and without producing pronounced symptoms indicative of its presence. This reaction on the part of the organism is often expressed only in terms of unstable physical force and nerve-exhaustion and not the recognized clinical picture too often considered as a "sine qua non" in order that a diagnosis of tuberculosis shall be made.

I wish to emphasize this. Many persons carry tuberculous infections in whom there can be found

no distinctive objective focal evidence of the disease in the lungs, lymph glands, peritoneum, pleura, pericardium, kidneys, bones, or elsewhere. The clinical picture which is presented by tuberculosis (concealed) in those silent areas of the body where at best only obscure and uncertain objective signs can be detected to indicate its presence, and where the individual shows only the evidence of the slow-burning fires of a toxæmia, without the presence of symptoms and clinical signs expressive of the localizing ravages of the bacillus itself, is a common occurrence. This type of tuberculous infection I can best illustrate by the following case.

Miss E. L.[1] Aged twenty-three years, single, living at home, admitted to St. Barnabas Hospital on October 14, 1913, complaining of backache, insomnia, spells of depression, and attacks of indigestion. Her family history was negative. When a young girl, she had a playmate who later developed and died of tuberculosis of the lungs. The patient herself had never been very strong, even as a child. Her past history included a long series of illnesses of various sorts—curvature of the spine at five years of age, at first thought to be tuberculous, later considered hysterical; chorea at ten years of age; dysmenorrhea at fifteen years, associated with fainting-spells and exhaustion, often keeping her in bed for days at a time during

[1] Abstracted from American Journal Medical Sciences Vol. CLII. No. 4, Page 582.

her menstrual period; various abdominal operations performed at different times, terminating in hysterectomy in February 1912. No cause given by the operating surgeon for the hysterectomy other than that it was considered best for the patient's general state of health. No pathological lesions found at operation.

The history of the patient's present complaints dated back over a number of years and included a long series of symptoms of indigestion, abdominal pain, backache, insomnia, constipation, attacks of mental depression, crying-spells, dizziness, aching in the neck, headache and eye-ache. The patient stated that she had never had a good appetite, that the daily routine of her life exhausted her, and that year after year found her building-up from one attack of exhaustion only to relapse into another. She had lived a semi-invalid existence. She had tried to work at various times, but always had to give up because she became so tired and exhausted. She had had a slight nervous cough at times, but had never coughed sputum. Many consultants had examined her lungs, but had found nothing abnormal. In the past year the patient had lost about fifteen pounds in weight. In order to improve her digestion she had dieted to such an extent that she could scarcely eat solid food of any kind.

The patient was a tall, angular looking girl, with high cheek-bones, long chest and abdomen. Throat

and teeth negative. Marked tremor of the upper eyelids with the eyes closed. Increased knee-jerks. Pupils reacted to light and accommodation. No incoordination. Some tremor of the finger-tips. No enlargement of the thyroid, no exophthalmos. She presented all the stigmata of a highly nervous girl. Her hands, arms, and legs twitched during the examination. She seemed melancholy and depressed.

A careful physical examination of the patient, including a searching examination of the lungs and heart revealed no evidence of organic disease. There was a moderate gastroptosis, a dislocated kidney on the right side, some tenderness over the abdominal aorta and along the lower spine. Urine and gastric examinations were negative. No occult blood in the stools. Blood was negative except a slight secondary anæmia, hemoglobin 87 per cent. Wassermann reaction negative. Von Pirquet test positive.

The patient was studied in the hospital over a period of two weeks. She had occasional rises in temperature to 99.2 degrees. The pulse was from 85 to 100 to the minute. No definite diagnosis could be made. She presented all the ear-marks of a highly neurotic young woman suffering from nervous and physical exhaustion. She had frequent crying-spells and much mental depression. She had occasional attacks of indigestion; was bothered much with insomnia; complained of cold hands and

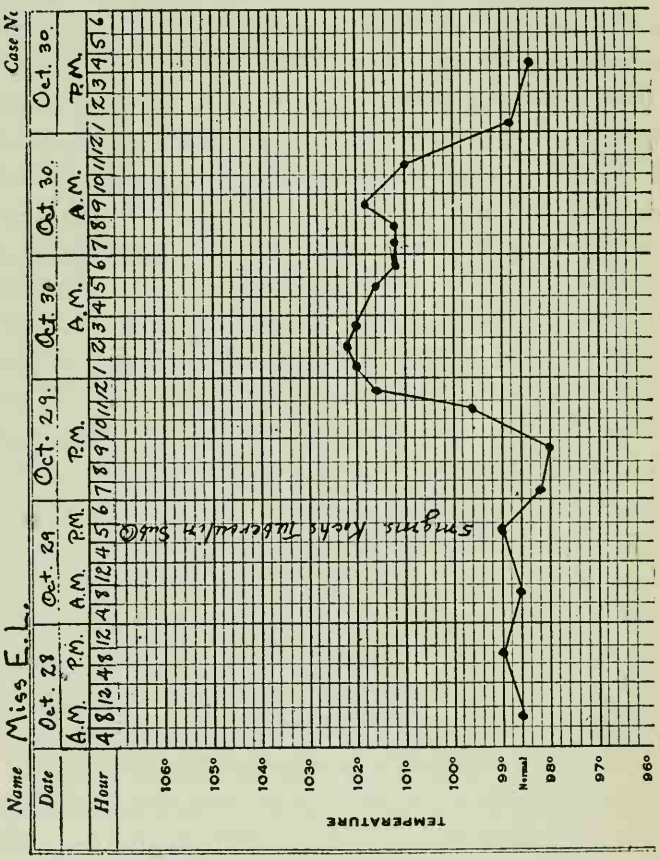
feet, backache, headache; and had a slight clearing of her throat. There was no sputum. On two different occasions she had fainting-spells while going to the bathroom. Roentgen ray examinations of the spinal column and lungs were negative.

The prolonged series of ailments and complaints dating back to girlhood, the symptoms of physical and nervous exhaustion, the absence of evidence of organic disease seemed to justify the diagnosis of neurasthenia. But what kind of diagnosis was this "so-called" neurasthenia? Why exclude syphilis in this case by a negative Wassermann reaction and fail to exclude tuberculosis by the tuberculin tests?

On the fifteenth day after admission, the patient was given subcutaneously 5 mgms. of Koch's old tuberculin and within sixteen hours exhibited a positive reaction, temperature going to 102 degrees (see chart on the following page). Following the positive tuberculin test the clinical diagnosis of neurasthenia was abandoned and that made of tuberculosis (concealed), focus not determined, with chronic tuberculous toxemia exhibiting symptoms of physical and nervous exhaustion.

Now here was a patient with a tuberculous infection but without a single recognized physical sign of the disease in any organ or tissue of the body. It was tuberculosis without the focal signs of the disease. It was tuberculosis revealed by the specific tests and not by the recognized clinical symptoms

and physical signs. This patient was, however, as truly infected with the tubercle bacillus as if she



had a recognized consolidated area in the apex of the right lung or tuberculous lymph-glands of the neck. Surely the failure to locate the lesion is no

good reason for denying the diagnosis, provided it rests upon good grounds.

The question may be raised—what pathological evidence can be offered to prove that a tuberculous lesion exists in this individual. Pathological proof in this instance is impossible. Patients like this one are living, will live on for years, and probably recover. When they do die and are examined, of what value is the pathological evidence? If a tuberculous lesion were present at autopsy, how could one know that it was there at the time the patient complained of her symptoms? If a tuberculous lesion were present and healed, how could one know that it was healed at the time of the patient's illness? If it were present and active, how could one know whether the lesion had been present and active at the time the patient complained of her nervous and physical exhaustion? Postmortem and clinical experience has proven the reliability and specificity of a positive subcutaneous tuberculin test as proof of the existence of an active tuberculous infection. Further evidence than this is not needed in answering the question raised. The proof that the patient harbors a tuberculous infection rests upon the specific test, just as in latent forms of syphilis the presence of the infection rests upon a positive Wassermann reaction either in the blood or spinal fluid.

But granted that in this instance this patient harbors an active tuberculous infection, upon what

grounds can a causal relationship between the so-called neurasthenic symptoms and the tuberculous process be established? Your attention is directed, first, to the absence of any organic disease except tuberculosis. Then again the symptoms have existed over a long period of time. Any organic disease which could serve as a causal factor must be one which the body can tolerate for years in a slow-burning form, without producing death or pronounced pathological changes. Pathological and clinical studies have clearly established the chronicity of tuberculosis. The infection can be tolerated by the body over years of time. Tuberculosis, therefore, meets this requirement as a causal factor for the chronicity of the complaints.

Furthermore, this patient's history clearly shows periods of time when she has been in fair health, then would come a "breakdown," with a return of the old symptoms after over-taxing her strength. Such a course is typical for tuberculosis. It is notorious for the tendency which it shows to become aggravated under undue strain or fatigue. It likewise manifests periods of quiescence over long intervals of time.

Again, any disease which can serve as a causal factor for this patient's condition must be one which in its recognized state exhibits symptoms of physical and nervous exhaustion. This tuberculosis does. All authorities agree upon the ability of the tubercle bacillus to produce toxic substances which,

circulating in the body fluids, produce symptoms of great variety, difficult to classify, and well-expressed in the terms—a tired state of body and mind, lack of reserve force, and inability to stand up under the wear and tear of life.

Finally, the organic lesion which can account for her condition must have a tendency to heal spontaneously in later life. For this patient does not die of tuberculosis. She lives on, in fact, is still living fifteen years after the test was given. She has developed no certain, clinically demonstrable evidence of tuberculosis. As her age advances, she has grown better; many of her exhaustion-symptoms have disappeared; she has gained in weight; and now, in later life, is in a fair state of health. Tuberculosis meets the requirement in this respect. Many persons harbor it in a quiescent form for years, only to have the organisms die out in later life, with the restoration of a fair degree of health. With the knowledge before us, therefore, that this patient harbors a tuberculous infection as determined by the tuberculin tests, that she shows no evidence of other organic disease, that tuberculosis in its recognized forms exhibits a symptom-complex resembling closely neurasthenia (so-called), that the years-long symptoms can be explained by a chronic disease like tuberculosis and that low-grade forms of tuberculosis show a tendency to die out, leaving the patient in later life in a fair degree of health,—these facts make it reasonable to conclude

that the tuberculous infection is the organic cause for the symptoms of weakness and exhaustion complained of, and that we are dealing with a disease, tuberculosis, which is common and about which as a disease-entity we know a great deal, rather than neurasthenia (so-called), an intangible symptom-syndrome about which as a pathological process we know nothing.

CHAPTER 2

SYMPTOMS

Patients with concealed tuberculosis are chronic complainers and describe a multiplicity of symptoms out of harmony with our present conceptions of the symptomatology of the infection. The study of a large group discloses certain rather distinctive features. There is, first, the extreme variety and number of the complaints; second, the years-long duration, many times from childhood; third, the periods of exacerbations, usually following loss of weight or undue physical or mental strain; and, fourth, the better state of health under rest and restricted effort, or in the later periods of life. A list of the complaints named in the order of their greatest frequency is as follows: indigestion, constipation, loss in weight, cold hands and feet, mental depression, crying-spells, lack of endurance, neck-ache, backache, weakness, worrying over trifles, cough, eye-ache, dysmenorrhea, insomnia, pains in the chest, voice-tire, dizzy spells, tendency to take deep breaths, clearing of the throat, palpitation of the heart, shortness of breath, and jerking of the limbs. All of these patients complain not of one but of many of these symptoms. They are so varied as to

defy analysis. The symptom-complex is characterized by its lack of conformity to any recognized clinical picture. Introspective lest they overdo, these patients become watchful of the expenditure of their vital force, either physical or nervous. Experience has taught them to husband their bodily resources in order to live a tolerable existence and avoid the depressed state of body and mind which results from over-exertion or fatigue. They are extremely sensitive to cold and must watch themselves to avoid drafts or chilling. It is the chilling particularly that aggravates or excites the forms of pleurisy from which many of them suffer and which explains the neck, chest, back, and upper abdomen pains, of which many persistently complain. These are often so baffling to interpret once one loses sight of the underlying causal factor.

A study of the clinical histories of these persons discloses certain prominent symptoms which come into the foreground and focus the attention of the clinician. These I have grouped together. But in describing these symptom-groups I do not wish to be understood as advocating hard and fast lines of differentiation. The clinical pictures are not clean-cut as a rule and there is much overlapping. Complaints indicating lack of endurance, nervous exhaustion, low vital force, and easy physical tire interweave into the histories of nearly all.

THE CHEST PAIN GROUP

(Illustrative Cases II, V, IX, XXIII, XXIV, XXV. Chapter 6.)

This is a very important symptom-type of concealed tuberculosis. We are familiar with the large percentage of healed and latent forms of tuberculous pleuritis which are encountered at autopsy, but rarely stop to consider the large number of persons who go about through life carrying these tuberculous infections of the pleura, many of them never consulting a physician; or, if they do, an all too careless examination fails to reveal the evidence of pleuritis, and the diagnosis of neurasthenia, intercostal neuralgia, intercostal neuritis, intercostal myalgia, etc. is made.

The chest pains are often of long duration, extending sometimes over as many as five, ten, or more years (Cases II, IX, XXIII). In fact, they are characterized by their persistence and their tendency to appear when the individual is tired or overworked (Case VII). They keep recurring in winter and spring when the vital resistance of the patient is low (Case IX). The locations of the pain are varied and often are referred far from the seat of the lesion (Case IX). Some of them are referred to the mid-sternum, a considerable number into the upper or lower back (Cases II and XXVIII), or directly to the spine itself, or to the right or left shoulder (Case XXV), down the arm, into the neck,

(Case XVII), or into the upper abdomen, or into the region of the heart. Those referred into the abdomen originate undoubtedly from the diaphragmatic pleura or the lateral pleura close to the diaphragm. They are notorious also for their mobility (Case IX). At one time the patient may complain of pain in one side of the chest and at the next examination in the other side; sometimes at the base and again in the upper part. Many times a dry, pleural friction-rub can be heard directly under the point of pain, or, if one is careful to examine all parts of the pleuræ, tucked away in some unsuspected area, more often at an apex or at the base (Cases XXV and XXVI). In many, no friction rub can be heard, or it may be present at one examination and absent at another. When present, it comes out best on deep inspiration or cough and, if one is not careful, it is easily overlooked. The fine friction rub is often limited in extent and may not cover an area larger than a dollar or the palm of one's hand. Cough or deep breathing may or may not aggravate it. Exercise, if violent or prolonged, will often increase the chest pain. Many of the dull backaches, high up, in both men and women, of long standing (Case XXIII), which come and go, are due to these dry forms of pleuritis. Many of the ill-defined neckaches, which so-called neurotic women complain of (Cases XXIV and XXV) are undoubtedly referred pains from forms of tuberculous pleurisy

localized in small patches in the upper part of the chest, or referred from a diaphragmatic pleuritis.

NERVOUS EXHAUSTION GROUP

(Illustrative Cases I, IV, VI, VII, VIII, X, XII, XIII, XIV, XVII, XIX, XX, XXII, XXVII. Chapter 6.)

These individuals present a confused syndrome out of harmony with any hitherto well-defined clinical description of the disease. So varied are their complaints that the physician is baffled in his attempt to interpret them in the light of the well-established symptomatic pictures with which he is familiar. These patients feel tired all of the time. "The Tired Sickness" is expressed "par excellence" in this phase of the infection. The exhaustion is complained of more in the morning and early part of the day. As the day advances they feel better. Every added exertion, slight worry, increase of responsibility, sickness in the family, entertainment of guests, or unusual demands of any sort upon their strength only add to this feeling of exhaustion (Cases II, V, VI, VII, XII, XVII). These are the patients that give the history of nervous breakdowns, beginning oftentimes in childhood, and resulting in the child being taken out of school for rest, later returning and having the experience repeated sometimes again and again (Cases VII and XIX). Many of them in adult life while in college "break down" and finally are compelled to give up their college training. Teachers, stenog-

raphers, bookkeepers, and other persons occupied in indoor work under high nervous strain, make up a large part of this group. These individuals spur themselves on to do their assigned tasks, only to lapse into states of exhaustion, and then must rest and recuperate their physical and nervous reserve. They suffer much from backache, indigestion, headache, exhaustion due to mental effort, eye-ache, dysmenorrhea, insomnia, dizziness or fainting-spells, and air-hunger. They are chronic complainers and real sufferers. Some are children. The parents will bring the child stating that they do not know what the matter is that the boy or girl seems tired all the time. These patients lack strength and endurance, "play out" easily at school, and if they are put to work, they lack physical stamina and often lose their positions, not because they are not bright and active and willing, but because their vital force is sapped by a tuberculous toxaemia. In a family of four or five children, this one child will often be the only one who will react positive to the tuberculin tests and will be the only child showing exhaustion-symptoms. Many are young women who have been operated upon for pelvic displacements, ovarian disease, chronic appendicitis, ulcer of the stomach, chronic constipation, and abdominal adhesions (Cases X, XXII, XXIII, XXX). They progressively lose weight and live in a state of undernutrition. It is possible that some of their symptoms are due to a sub-nourished

state. The loss in weight is usually slow and progressive. They feel best when they weigh most. Some of them have a slight clearing of the throat or a little cough when tired or exhausted (Case XVII). Spells of weakness or faintness are frequently complained of, especially when the stomach is empty (Cases VI and XIII). Many of them give a history of exposure to tuberculosis in childhood, usually a father or mother, relative or friend having the disease (Cases VI, XIII, XVII, XX).

In connection with this group I wish to speak of a peculiar type of case, the chief symptom of which is air-hunger or the tendency of the patient to take deep breaths (Cases III, VIII and XVI). These patients are usually referred as cases of hysteria, because no rational explanation can be found for the tendency which the patient exhibits to take deep breaths and inhale more air into the lungs. They present a very striking picture. Every third or fourth breath the patient takes very deep and full, using all the excessory muscles to fill the lungs with air. Searching examination of these patients fails to disclose any organic disease outside of the presence of a tuberculous infection as revealed by the tuberculin tests. The majority of the patients in this exhaustion-group possess a high natural resistance, otherwise there would be less so-called neurasthenia and more tuberculosis. Only a small percentage of them develop physical signs of an active tuberculosis and then only after long years of

suffering from the symptoms of physical and nervous exhaustion (Case XVII). Many are weak, nervous creatures going from one clinician to another who, on account of the negative physical findings, make a diagnosis of neurasthenia, nervous exhaustion, psychasthenia, effort-syndrome, or neuro-circulatory asthenia. A careful clinical study of the case may arouse one's suspicion, but the physical findings are usually too ill-defined to correctly interpret the disease. The diagnosis is established by subjecting the patient to the specific tests. These cases are common and they should be diagnosed and treated as tuberculous infections rather than some form of nervous exhaustion.

THE COLD AND COUGH GROUP

(Illustrative Cases V, VII, VIII, IX, XII, XXVI. Chapter 6.)

The cough as a rule is just enough to attract the patient's attention. It is frequently described as nothing more than a clearing of the throat (Cases IX, XII, XXII). There usually is no expectoration. If the patient becomes tired or exhausted, or undertakes physical exertion it will be aggravated. It often persists for years (Case XXVI). Some of the patients complain of the cough from childhood In many it recurs after years of quiescence. It is often described as a little nervous cough. Many have been repeatedly examined and reassured that nothing was wrong. Some of these patients are thick chested with heavy shoulders and muscular,

well-developed limbs. They have good lung expansion. The majority, however, are thin, long chested individuals with high cheek-bones, prominent clavicles, and slender limbs. A few complain of dyspneic attacks resembling mild types of bronchial asthma. Most of them complain of catching cold easily (Cases II, V, VII, and IX) and when they take cold, the cough is aggravated and some expectoration may continue for a time to finally cease; and then the so-called little nervous cough continues. A few of these patients will have a sudden, small or even large hemorrhage from the lungs when in apparently good health. Well-defined physical signs indicative of the presence of a tuberculous infection in these persons are absent. Sometimes a careful, searching examination will reveal a friction-rub in some part of the chest (Cases V and XII), or a few fine crackles or roughened breath sounds at an apex which do not persist and cannot be interpreted with certainty as evidence of a tuberculous process (Case XXIII). These patients often complain of chest pains. However, the slight cough, the throat irritation, and the tendency to take cold are the important and leading complaints. Lack of endurance and vital force are complained of by many and are interwoven in the symptom-picture. Fluoroscopic and stereoscopic X-ray studies of the chest give help in the interpretation of many of these cases, but X-ray studies so often fail to differentiate between the healed, quiescent, and active lesions

that I have learned to rely more upon the evidence furnished by the specific tests.

THE ABDOMINAL DISTRESS GROUP

(Illustrative Cases II, X, XI, XV, XVI, XVII, XXV, XXX. Chapter 6.)

While the clinician is more likely to be on his guard relative to the interpretation of the class of cases just described, he may easily be deceived in his attempt to ferret out the underlying cause in the abdominal-distress group. It is quite probable that most of the symptoms complained of are referred pains caused by irritation of the six lower intercostal nerves which supply the lower chest and outer part of the diaphragmatic pleura. These forms of dry tuberculous pleuritis located in small areas just above the diaphragm are very common and produce pains in the upper abdomen as well as abnormal secretory changes in the stomach and other abdominal organs.

These patients present themselves complaining of such gastric symptoms, as belching of gas, heartburn, palpitation of heart after meals, distress after meals, etc., or ill-defined pains in the upper or at times in other parts of the abdomen. The abdominal distress is of a very irregular sort, often described as nervous dyspepsia. It lacks the regular meal time element usually associated with gastric or duodenal ulcer, although some of the cases are difficult to differentiate from this condition.

There is no fixed point of deep tenderness. Fermentative disturbances with belching of gas are frequent. Heavy, rich foods, such as pastries, etc. cause most of the trouble. The taking of a laxative usually gives prompt relief. The gastric findings after an Ewald meal are about normal. Hyperacidity or subacidity may exist. In some of the cases nausea is complained of and is occasionally persistent. These patients lose slowly but persistently in weight. They have poor appetites and take less food than the body requires to maintain weight. If they eat when overly tired or under nervous excitement, the gastric symptoms are worse (Cases XVII and XX). There is a lack of objective findings. In some of the cases there is an ill-defined abdominal tenderness without other objective findings in the abdomen (Cases X and XVI). A small percentage of these patients undoubtedly have tuberculous lesions of the appendix, omentum, peritoneum, or other abdominal or pelvic structures, as an occasional abdominal section will show. The chief characteristic of this group of cases is the obscure nature of the abdominal complaints, not fitting in well with a diagnosis as applied to disease of any one of the organs to which one ordinarily looks for the production of abdominal symptoms,—namely, the appendix, gall bladder, pancreas, stomach, or duodenum.

These cases form a very important group and while many symptoms indicating nervous and physical exhaustion are present, the attention of the

patient and the physician is usually focused upon the abdomen and, unless a very careful study of the case is made, surgery is too often resorted to in the attempt to clear up the diagnosis and apply what is thought to be rational therapeutics (Cases X and XXX). It is not well enough understood that distress in the abdomen, especially in a young person, always calls for a very thorough examination to detect the presence of a lesion outside of, as well as within the abdomen. This fact has been dwelt upon again and again by the old writers on the subject, but is still too often forgotten. Just what percentage of these persons actually harbor a tuberculous lesion in the abdominal organs cannot be answered, since in applying the tuberculin tests in these individuals one often has no accurate knowledge of the location of the disease. One only knows that a tuberculous infection exists. Some of these patients are doubtless suffering from gastric malsecretion or circulatory disturbances in the stomach wall caused by a chronic tuberculous toxæmia, the lesion being located in the lungs, mediastinal lymph-glands, or pleuræ. No doubt the poor state of nutrition, which we find in many, may serve as a causal factor for some of their complaints.

In some of these patients the diagnosis of mucous colitis was made because of the appearance of mucous in the stools associated with attacks of abdominal distress. In these I have not been able to demonstrate tubercle bacilli in the stools or

lesions in the bowels and while it is possible that some of the cases may have small tuberculous lesions in the peritoneum, intestines, or appendix, which may explain the presence of the mucous, its origin is most probably from the stomach.

CHAPTER 3

PHYSICAL EXAMINATION

The limitations of our methods of physical examinations are nowhere more clearly demonstrated than in our attempts to detect by objective physical signs the presence of these hidden forms of tuberculosis which we are discussing. One needs only to follow over a series of years a group of these patients examined in the stages of the infection when symptoms indicating lack of physical endurance and nervous exhaustion are complained of to become painfully aware of the many failures made in the interpretation of the condition.

These mistakes are due in part to a lack of knowledge of the symptomatology of this type of the infection, in part to a carelessness in detecting suggestive physical signs, in part to the absence of abnormal physical findings after the most thorough examination, and in part to the failure of the clinician to use the specific tests which experience in both man and animals has proven of value in detecting the presence of the tubercle bacillus.

Possessing as many of these patients do a high natural resistance, and complaining as they do of a varied lot of symptoms suggestive of toxæmia

rather than disease localized in some special organ or tissue, the investigation of the case must rest largely on the knowledge derived from a well taken history especially in relation to exposure to tuberculosis, a careful physical examination for suggestive signs of tuberculosis or to exclude other diseases giving a like series of complaints, laboratory studies for a like purpose, and the judicious use of tests specific for the infection.

In the series of illustrative cases included in the final chapter, I have endeavored to present concrete examples of the varied symptomatic pictures and physical signs met with in these patients. It seems necessary, however, to describe in more detail some of the special features disclosed by the examination.

On inspection one notes as a rule a poorly nourished individual with angular features, high clavicles, prominent ribs, and narrow interspaces. The chest is long and narrow, and the abdomen is scaphoid. The limbs are slender and the muscles poorly developed. The tongue is clean; the mucous membranes are pale; and the reflexes are active. These patients give at a glance the impression of being high-strung nervously. The upper eyelids tremble when they are standing with the eyes closed. When the arms are fully extended and the fingers spread wide apart, the finger-tips have a fine tremor. The hands are cold to feel, and the muscles over the body are in a state of tension. Mentally alert and intelligent as a rule, these

persons describe their symptoms accurately and without confusion. When the story of the complaints is retold, the same symptoms will be emphasized over and over again. They lack control over their emotions and are much disgusted with life and themselves because of their worthlessness and inability to withstand the wear and tear of existence. They are introspective and, as the complaints are related, give one the impression of describing a lot of symptoms which cannot be correlated and woven into a concrete whole, indicative of any well-defined disease-picture with which one is familiar.

The physical examination reveals no well-marked evidence of organic disease. The lungs may show signs of an old adherent pleuritis in one or sometimes in both pleuræ, located either at the apices or the bases, laterally or posteriorly. A few fine crackles, pleuritic in origin, may be heard in either or both apices, which may persist or disappear after a few inspirations, only to reappear at the subsequent examination. These are heard usually at the close of inspiration or at the period of lung recoil after cough. A very common location for the fine pleural crackles is at the bases of the pleuræ, just above the diaphragm, more often on the left, and often heard either below the angle of the scapula in the mid or anterior axillary line, or just below or to the left of the cardiac border. They are not infrequently heard in the right or left second and third intercostal spaces, close in toward the margin

of the sternum. They are often extremely localized, and may be soft and velvety in character as well as sharp and clicking. I am sure these pleuritic signs are frequently overlooked or their significance underestimated. They are often interpreted as atelectatic crackles because of their lack of persistence; but, if one will take the trouble to repeat the chest examinations of these patients, he will soon satisfy himself that they remain fixed in the location where found. A sharp cough will often bring them out when they cannot otherwise be heard. They are usually localized just under the area where the patient complains of the chest pains, although it must not be forgotten that the chest pains may be referred far from the site of the abnormal chest signs. Physical signs of past or present lung involvement are usually lacking. An occasional area of impaired resonance in an apex, or modified breath sounds, or slight changes in vocal fremitus, or modified spoken or whispered voice sounds may be detected. A characteristic of the chest findings is their ill-defined character. After the most thorough and painstaking examination, one is left in an uncertain state of mind as to the significance of the physical signs found.

The hearts of these patients are long and narrow and, on account of the long chest and low-lying diaphragm, the heart hangs low. The sounds are of good quality both at the base and the apex. Murmurs are usually absent. If present, they are

systolic in time and heard at the second left intercostal space or at the apex. The apex murmurs are rarely transmitted. The heart-rate is as a rule faster than normal, 90 to 110, and is easily accentuated by exercise or nervous excitement. Under rest it assumes a nearly normal rate. Irregularities of the heart are rarely encountered. With the long abdomen, visceroptosis is usually present. The abdominal aorta is prominent and its pulsation well-marked. Tenderness over the abdominal aorta is frequently found. Every now and then one finds a patient with concealed tuberculosis of short stocky build, broad chest, wide costal arches, and a high-lying diaphragm, with a heart resting well up in the left chest, and abdominal viscera in place. These cases are the exception but it must not be forgotten that they do exist. Some of the so-called fat neurasthenics belong to this group.

A rather important clinical finding is the rise in temperature. It is not present in all the cases. It rarely goes above 99.4 to 99.6 degrees and is usually present when the patient exerts himself or is under nervous strain. It rarely occurs if the patient is in bed or under quiet surroundings. Any rise in temperature which appears under exercise and disappears under rest should arouse one's suspicion of concealed tuberculosis. The temperature may be present one day and absent the next. If present when the patient is quiet, it usually appears in the afternoon or evening. A subnormal morning tem-

perature is the rule in these individuals if they remain quiet. This, with the low blood-pressure which many show, probably accounts for their morning lassitude.

The remainder of the physical examination will reveal little or nothing abnormal. The laboratory findings may disclose a slight secondary anæmia or a trace of albumen in the urine. The Wassermann reaction will be negative. One feature of the blood examination of some importance is the increase in the mononuclears from five to twenty per cent above normal, with a corresponding decrease in the polymorphonuclears.

The X-ray chest examination, especially with good stereoscopic plates, may exhibit abnormal shadows in the pleuræ or the lungs. In many with the mild grades of tuberculous pleuritis which may be the only lesion present, no abnormal lung shadows can be discovered. In these patients the roentgenoscopic studies are of no help and may be misleading in that this evidence tends to strengthen the impression of the clinician that no organic disease exists. The mediastinal and lung-root lesions are so located as to escape detection by X-ray studies. The small, patchy pleural areas of involvement, which are so common, do not present sufficient fibroid tissue change to cast shadows which can be clearly differentiated as pathological. The pleural covering of the diaphragm lies in such a position as to defy the detec-

tion of tuberculous lesions there, unless adhesions sufficiently dense have formed to hitch up the diaphragm and produce angular irregularities over its dome which the X-ray will detect. In the study of tuberculous infections in this class of individuals, the X-ray examination presents serious difficulties in differentiating between healed, latent, and active lesions. In my attempts to identify persons with concealed tuberculosis, the X-ray examination has furnished evidence which has been in some cases confirmatory, in other cases negative, and in only a small group specifically diagnostic.

The von Pirquet tuberculin test by itself, without the subcutaneous test, is of real value in identifying concealed tuberculosis provided one pays attention to the severity of the reaction. A flaring, active erythema, with a raised inflammatory area the size of a fifty-cent piece or larger and with radiating red lines showing lymphatic irritation, appearing within twelve to twenty-four hours following the scarification of the skin, speaks strongly for an active tuberculous lesion in the individual so tested. With some exceptions, all persons giving such a violent reaction to the skin test will react positively with a well-marked temperature-rise and other constitutional symptoms when given the subcutaneous test. On the other hand, patients showing low-grade or feeble skin reactions, or reactions delayed beyond the twenty-four hour

period may or may not give a positive subcutaneous tuberculin test.

After the physical examination is completed and all the findings are before him, the clinician, brought face to face with the interpretation of these patients harboring concealed tuberculosis, finds himself in a state of doubt as to the nature of the pathological process underlying the symptoms of which they complain. It is then that he calls to his aid the specific tests which will reveal the presence of the tubercle bacillus in the body. With the skin and subcutaneous tuberculin tests positive, he has completed the chain of evidence and stands in an advantageous position to establish a positive diagnosis and deal wisely with his patient.

CHAPTER 4

DIAGNOSIS

The recognition of concealed tuberculosis demands the best diagnostic skill. The symptoms related by the patient are so varied, the clinical picture presented is so ill-defined, and the symptoms have usually continued over such a long period of time that most clinicians, after hearing the history of the illness and finding so little positive evidence in the physical examination, allow themselves to be forced to the conclusion that no disease exists, and that all the complaints can be laid at the door of the so-called functional neuroses.

Such an interpretation of the complaints of these poor sufferers might readily be accepted had all the means provided by scientific medicine been exhausted in an attempt to clearly demonstrate whether or not the patient harbored organic disease. It is most probable that in making the diagnosis of neurasthenia the patient had been given the Wassermann test to exclude syphilis but that the tuberculin tests had not been utilized to exclude tuberculosis, a disease much more prevalent than syphilis and one notorious for producing symptoms of exhaustion and weakness over months and years.

It is important, therefore, when approaching the study of the patient from this angle, to have clearly in mind two well-demonstrated facts: first, that no disease which man is heir to can produce such clean-cut clinical pictures of nervous and physical exhaustion as tuberculosis; and, second, that tuberculosis in one form or another is the most common infection of man. Therefore, when a man, woman, or child comes complaining of a long history of symptoms indicating a tendency to give out under the wear and tear of life and a lack of physical and nervous reserve under strain, worry, etc., tuberculosis in a concealed, slow-burning form should be the first disease to think of and should, with the other maladies known to produce a like symptomatology, be excluded.

Now, what are the diseases which may give a similar clinical picture and how can we best differentiate them?

Syphilis.—It is a well-recognized fact that the spirochete of syphilis may inhabit the human body for years, producing evidence of its presence by a symptom-complex very difficult to interpret and sometimes difficult to differentiate from the clinical picture presented by concealed forms of tuberculosis. In both diseases, the symptoms may be of long duration; in both, the complaints are most varied. In both, slight fever over long periods of time may occur. In both, the presence of the organisms may be so veiled as to baffle the best clinician

in his search for the tell-tale evidences of their presence.

The spirochete of syphilis does not take the nutritional toll from the patient that the tubercle bacillus does. Patients so infected usually maintain their weight up to normal and look well; while those harboring the tubercle bacillus are usually in a state of poor nutrition. Patients with syphilis are more likely to complain of dizziness, numb sensations over the body, sharp darting pains in the limbs, confused mental states, fainting-spells, headache, defective memory, bone pains, neuralgias, etc.; while those harboring the tubercle bacillus will complain of chest pains, gastro-intestinal disturbances, slight cough, clearing of throat, muscle-tire, backache, neckache, etc. Patients with latent syphilis, showing exhaustion-symptoms, are not so persistently affected. That is, the fag and tire come more often in periods with intervals of months or years in which fair grades of health and activity are enjoyed. It is the persistence of the exhaustion and its tendency to recur after severe effort which is rather characteristic of tuberculosis, especially tire or fag under undue nervous or physical strain.

The careful clinician will often pick up some clue in his examination of the patient with lues which will arouse his suspicion—the fixed, unequal, or irregular pupils, irregularities in the knee-jerks, old scars, rough tibiæ, mild grades of incoordination,

slightly enlarged epitrochlear glands, perforate palate, etc. This is not often the case in concealed tuberculosis since, aside from fleeting fine crackles here and there in the chest, or a slight temperature-rise after exertion, or increased pulse-rate, nothing suggestive of the infection may be found in the physical examination of the patient. A carefully taken history is often of great help in the differentiation. In syphilis, one elicits the history of an initial lesion in men, and in women—sterility, miscarriages, still-births, and unhealthy offspring; while in tuberculosis, one usually encounters the history of direct exposure to the disease often in childhood. The history of exposure to tuberculosis must many times be sought for by asking leading questions and childhood exposure must not be overlooked, since the key to the interpretation of the case often rests there. When the patient answers "No" to the question of contact with a tuberculous person, I often reply: "Now think back over your life. Do you remember as a boy or girl anyone in your family, or an uncle or an aunt living in your father's house, or a neighbor in whose house you often went to play, or a school or college friend with whom you associated, or a family friend in whose home you visited, who had consumption?" It is astonishing in how many of the patients with so-called neurasthenia the history of direct exposure to a case of known tuberculosis can be brought

out if the examiner takes the pains to go carefully into the patient's early life, especially during childhood. When the history is negative for a direct exposure to tuberculosis, I find very few patients showing evidence of an infection when tested with tuberculin. For this reason, the history of the case is of great importance in the differentiation between exhaustion-states due to lues and those due to tuberculosis.

In the final analysis, however, one must rely upon the specific tests. It must be remembered that a negative blood Wassermann reaction does not exclude syphilis. In a case of this character where lues is suspected, a spinal fluid Wassermann test should also be made. If blood and spinal fluid Wassermann tests are negative, and the history and physical findings disclose no positive evidence of a syphilitic infection, one is justified in excluding lues and searching elsewhere for a cause of the exhaustion-symptoms complained of. It is rather uncommon to find the two diseases in concealed form harbored by the same individual.

Myocarditis.—The symptom-complex of "The Tired Sickness," as expressed in a low-grade form of tuberculosis, may be very closely simulated by those states of exhaustion produced by post-infectious forms of damage to the heart muscle. The increased pulse-rate and irritability of the heart, the evidence of circulatory disturbances as expressed in cold hands and feet, weak or faint

spells, headaches, backaches, disturbances of sleep, gastric and intestinal upsets, eye-tire, the low states of nutrition, the long period over which the asthenia may persist without improvement, the signs of nervous irritability, the melancholia, the highly emotional states,—all these are most beautifully expressed in the clinical pictures presented by patients with either myocarditis or concealed tuberculosis.

In myocarditis, the history of exposure to tuberculosis is usually lacking, and the history of an acute infection antedating the onset of the symptoms of exhaustion usually present. Influenza is the greatest offender in this regard; tonsillitis is second; and articular rheumatism third; while pneumonia, diphtheria, scarlet fever, erysipelas, and the other infections, such as sinus disease, abscessed teeth, etc., —all these must not be forgotten. In myocarditis, subjective sensations in the region of the heart or in the left chest and shoulder are frequent, especially after exertion, or when the stomach is dilated with gas. In hearts showing myocardial damage, the heart-rate is much more easily increased or disturbed. The exhaustion-states do not so commonly date from childhood. They are more persistent while they last and appear as a rule following the acute infection.

The careful physical examination is of great help in the interpretation of the case, since in myocarditis one's attention is usually attracted to the heart

by states of disturbed rhythm, or feeble heart-sounds at the base, or low blood-pressure, or murmurs of myocardial character at the mitral area, clearly of a muscular nature. While a fast pulse-rate is frequently encountered in concealed tuberculosis, it is not so common for these patients to complain of cardiac distress and subjective sensations dependent upon exertion. In concealed forms of tuberculosis, the pulse may be fast and the patient conscious of its action under exertion; but cardiac irregularity, dyspnœa, cardiac pain associated with exertion, attacks of palpitation, etc. are rarely complained of. The patient with concealed tuberculosis meets the physical demands made upon his body and experiences the exhaustion afterward. The patient with myocarditis often plays-out while attempting to complete a given amount of physical exertion, or is too weak to undertake it and shrinks from the attempt because of the discomfort which in his former experiences he has encountered. The patient with tuberculosis is more likely to show temperature-rise on exertion, and runs as a rule a higher blood-pressure reading. In both conditions, the patients are very susceptible to cold and complain much of cold hands and feet. In both, symptoms of low-grade circulatory states are complained of,—backache, headache, eye-tire, neckache, dizzy spells, faintness, indigestion, gas on the stomach, etc. In both, the history of complaints may continue over months or years, although as a rule the

case with myocarditis recovers more rapidly and is not so prolonged in its course. In both, the blood-pressure is often low. In both conditions, prolonged rest in bed gives marked improvement. In both, the physical examination may elicit very few signs of the existence of the disease; a soft systolic bruit at the apex of the heart, not transmitted to the axilla, often heard over the body of the heart, aggravated by exercise, with feeble heart-sounds at the base fading out under exercise, a low blood-pressure, and a pulse increased in rate or disturbed in rhythm,—these may be the only evidences of the myocarditis.

The physical examination may be quite or entirely negative in concealed tuberculosis and the specific tests must be called on to correctly interpret the case. It is not unusual in the low-grade forms of tuberculosis of the left pleura to have the patient complain of pain around the cardiac area, in the left shoulder and arm, and also in the neck, which may closely simulate the pain associated with myocardial disease.

Patients with concealed tuberculous lesions of the pleura in the left lower chest in front will often complain of a dull ache, increased upon exertion or appearing when over-worked or tired, which closely simulates the cardiac distress associated with myocarditis. A careful, searching examination of the left chest for dry pleural friction-rubs, sharply localized in areas not larger than the size of a dollar

or a fifty-cent piece, but fixed and not disappearing on deep breathing or cough, should always be made in these cases and may be of help in differentiating between left-sided tuberculous pleuritis and myocarditis. Some of these tuberculous lesions involve those areas of the pleura in contact with or overlapping the pericardium, and a pleuropericardial click will be present and assist in the differentiation.

Pains referred into the upper left abdomen are not infrequently encountered in both diseases—in myocarditis, due usually to the distension of the stomach with gas pressing against the diaphragm and embarrassing the heart action; in concealed tuberculosis, due to the irritation of the lower six intercostal nerves by patches of tuberculous pleuritis situated upon the diaphragmatic pleura, so located as to give no auscultatory evidence of their presence. The pain of myocardial disease is more fixed in its location and does not shift as does that of low-grade forms of tuberculous pleuritis. The latter are often complained of, now on one side of the chest and, at the next examination, on the other. These chest-pains may locate themselves low-down, just above the diaphragm, or high up, just below the clavicle. They may be located in the front of the chest or in the back. They are often referred into the neck and along the trapezius ridge, especially when the diaphragmatic pleura is involved. It is the changing fleeting character of these pains, now in one part of the chest and now in another,

that make their interpretation so difficult and leads the clinician so often to give a wrong explanation of their cause and nature.

The left chest distress associated with myocarditis is much more fixed in the cardiac area than the pleuritic chest pains encountered in concealed tuberculosis. It is also more often brought on or aggravated by exertion. It is not common in concealed tuberculosis to find cardiac murmurs suggesting heart disease of one kind or another. Still, they do exist and undoubtedly some persons harbor both pathological conditions which may serve as causal factors for the symptoms of exhaustion of which they complain.

Gastric or Duodenal Ulcer.—Patients with concealed tuberculosis frequently center their complaints in symptoms suggestive of ulcer of the stomach or duodenum. This diagnosis is not infrequently made, especially when the tuberculous lesion lies in the diaphragmatic or lower parietal pleura (Case XIII). The tendency of the gastric symptoms to recur in spells or attacks over considerable periods of time, and to be aggravated by worry or physical tire, the burning sensation localized usually in the area bounded by the upper abdomen, the loss in weight, the relief when easily digested foods are eaten, the high acid state of the gastric contents, and the superficial epigastric tenderness,—all create a clinical picture easy to confuse with ulcer of the stomach. A careful analysis of the com-

plaints and the findings, however, fails to disclose a well-defined picture of ulcer. The gastric distress in concealed tuberculosis, while coming in attacks, is usually developed by over-work, or worry, or physical exhaustion, rather than by indiscretions in eating. The tenderness in the epigastric region proves to be a superficial skin sensitiveness and not the fixed point of deep soreness met with in ulcer of the stomach or duodenum. Vomiting is rarely present. Occult blood in the stools is absent. The stomach contents, while in the upper limits of normal acidity, rarely reach the grades of acid found in ulcer. Then again, the milk or soft food diet does not improve the symptoms or correct the distress so readily as in ulcer, and the distress is more in the nature of a feeling of fullness or distension, rather than a gnawing ache radiating through to the back. The X-ray studies in tuberculosis reveal no niche or incisura in the stomach walls, but usually a low-lying stomach with lax walls and inactive peristaltic action. The two conditions may co-exist in the same patient, but when one has established the presence of tuberculosis by the positive tuberculin tests in patients with gastric complaints, he must be slow to accept a diagnosis of ulcer of the stomach or duodenum, without the objective fixed point of deep epigastric tenderness supported by X-ray, stool, and gastric findings.

Hyperthyroidism.— The clinical picture presented by these silent forms of tuberculous infection may

suggest a mild grade of hyperthyroidism. The keyed-up state of the patient, the slightly enlarged thyroid, the rather full eyes, the fast, irritable pulse, the fine tremor of the finger-tips, the increase in the mononuclears of the blood, the slight temperature-rise, and the progressive loss in weight, make a suggestive set of findings. On closer study, however, the clinical picture is more apparent than real. There is no von Graefe's or Stellwag's sign; the skin lacks the doughy feeling; the abdominal aorta and other vessels do not throb so forcibly; the pulse-pressure is low; the mononuclears do not increase under the administration of thyroid extract; the metabolic rate is normal or slightly above; the heart, while fast, does not exhibit the snappy sounds and the tumultuous action of Graves' disease; and the symptoms subside quickly under rest in bed, generous feeding, and quiet surroundings. A continued, mild grade of fever may be encountered in both conditions. The pulse-pressure is low in concealed tuberculosis, and high in exophthalmic goitre. After the administration of thyroid extract, the mononuclears of the blood increase in exophthalmic goitre, while they remain stationary in tuberculosis. Seldom does one encounter both conditions in the same patient. In attempting the differentiation, the clinician is rarely in doubt if he makes a thorough investigation of the patient and does not become too hasty in coming to a conclusion. The chief difficulty lies in failing to

remember that concealed forms of tuberculous infection produce a very unstable, irritable state of body and mind. These patients are trembly and weak, are under-nourished, have hearts which become irritable and fast under exertion, and lack normal control over the higher nerve centers. At first glance, therefore, they present a picture similar to that of early, or mild grades of, hyperthyroidism (Case V).

CHAPTER 5

TREATMENT

The intelligent management of "The Tired Sickness" first of all requires the knowledge and skill to recognize its existence. Here indeed knowledge is power. The medical man is lost who tells the patient that he or she is nervous and attempts to treat the disease upon the ground of a so-called neurasthenia. These patients instinctively know that they are ill and their intuitive knowledge is correct. If a tuberculous base can be established to explain the condition, a cooperative, determined patient, willing to follow the program outlined, awaits the instructions of the physician.

It is most important at the outset that time and pains be taken to explain to the patient the exact condition present. The infection in these patients is usually one of low virulence. It is tucked away in some area of the body, more often a patch of dry pleurisy, or in a mediastinal lymph gland, or a small, partially fibrosed area in the lung. The natural tendency, therefore, is to heal, provided the cell forces of the body are given a fair chance. The diseased area is small. It is only mildly active. The tubercle bacilli are fairly well walled off. These

patients possess a high natural resistance. If this were not so, they would have succumbed to the infection long before. Most of them, even without treatment and allowed to drift for themselves, finally in later years work out a cure. This is the reason why they are complainers over such a long period of time. Many of them do not die of the tuberculous infection which they harbor. They are not made very ill by its presence. If this were not so, the condition would not so frequently be overlooked and misinterpreted. It is tuberculosis without the usual symptoms commonly accompanying the infection in its recognizable forms—fever, chills, sweats, cough, etc. One can, therefore, present a very hopeful view to his patient relative to the severity of the disease and the encouraging outlook. This is all the more necessary since, when at first a tuberculous base is suggested as the cause of the symptoms complained of, some patients become apprehensive and require much encouragement. A large percentage of these patients, however, are relieved to learn that some real cause lies back of their exhaustion-symptoms; and are steadied and encouraged by the knowledge that they have a disease which can be identified as a cause for their ill-feelings, and which is amenable to treatment and cure. It is well, therefore, to begin by giving the patient a talk upon the general phases of tuberculosis, citing the large number of persons who harbor the infection, and the comparative harm-

lessness of slight grades of the infection. One should point out the protective value of the concealed forms of the disease against the more virulent types; state that the pathology of the disease clearly indicates the stubbornness of the bacilli; that years are often required to kill the organisms out of a given focus; that in his own case so slight is the trouble that the focus of the disease is not even known. The clinician should point out further that the patient harbors a tuberculous infection; that the presence of the living bacilli in his body explains the physical and nervous exhaustion and the other symptoms of which he complains; that our chief concern in order to eradicate the disease must be to maintain a high degree of resistance in the body against the bacilli; and that this resistance must largely be worked out not by medicine but by building-up the cell forces of the body to combat the tubercle bacilli and neutralize their poisons. He should advise that good food, careful living and plenty of outdoor life are our chief weapons; that in time the patient will become perfectly well, lose his feeling of fag and tire, provided advantage is taken of the knowledge which the examination has disclosed; that in many instances this requires years, but a cure is certain; and that he is safe from the more serious forms of tuberculosis if he follows his instructions. In this way the apprehension of the patient is relieved, and his fighting spirit is aroused. The knowledge

that he or she can get well is thoroughly impressed upon his or her mind, and the patient is prepared for a struggle,—a campaign continuing over months or years. The ambulatory patient is then given his or her instructions, which read as follows:

INSTRUCTIONS FOR AN AMBULATORY CASE

It is important to remember that rest, avoidance of fatigue, long hours of sleep, short hours of work, and plenty of good, nourishing food are the agencies at your command for getting well and overcoming the symptoms of which you complain.

Cultivate an easy-going method of living and doing. You should be deliberate in all of your movements. Avoid any exercise which gives you a feeling of exhaustion. It is important to remember that your ability to digest food and absorb it depends largely upon the calm and equable state in which you keep yourself. Never eat when you are tired, irritated, or under nervous strain. Fatigue plays havoc with digestion. It is a well-known physiological fact that food lies for hours undigested in the stomach if taken at a time when one is nervously worried, disturbed, or keyed-up. Keep your mind off yourself. Do not think about your aches and pains. These will disappear as you get better and as you gain weight. They are not serious. Avoid worrying over trifles. Coach yourself in this respect, and when anything comes into your mind which you keep thinking

about again and again, change your train of thought and dwell upon those thoughts and experiences which give you a sense of peace. When you find yourself in a keyed-up state with taut muscles and a sense of strain over the body, sit or lie down, relax, and compose yourself.

Everything must be sacrificed to improve your nutrition and to put on weight. It is fat which increases the protective cell forces of the body and helps you to overcome the infection. As soon as you have begun to gain weight, you may take a reasonable amount of exercise each day in the open air. Walking from one-half to one mile upon the level is enough. Avoid all exercise which gives you a sense of fatigue. Any exercise, which, when completed, gives you a feeling of weakness which you do not readily recover from, is either too violent or too prolonged and a less amount should be taken. Exercise, when properly taken and in proper amounts, strengthens all the tissues of the body and improves the functions of all the organs. Of all the exercise allowed, walking is the best for you. You may do horseback riding if you wish. Any exercise which causes a rise in temperature should be discontinued. Swimming, tennis, football, baseball, handball, volley-ball, basket-ball, etc., or competing in athletic sports, are too vigorous.

It is important for you to eat often, from five to six meals a day—your three regular meals, with a

lunch of bread and milk, an egg nog, or some bread and butter between meals and at bedtime. You will be furnished with a list of foods indicating the food-value of each. From this list you will select a dietary which will help you to gain weight. Weigh yourself every third day and keep a record of your weight. You should gain from one to two pounds a week. Continue to keep a record of the calories you are eating from day to day so that when you report you can give the same with your weight. Chart the calories upon the special chart furnished you.

It is a good plan to lie in a relaxed state of body and mind before the main meal of the day. You should lie down one or two hours in the afternoon for complete rest and relaxation, when possible whether you can sleep or not. Be very careful about expending your nervous energy in needless and unnecessary conversation, particularly with friends, relatives, or others who will make all kinds of inquiries about the condition of your health, the methods employed in your treatment, etc. Conversation about all these things is tiresome, wearing, and unnecessary. Do not have many visitors. See the friends that give you a sense of peace and calm, not those that disturb and irritate you. It is important to keep in the open air as much as possible. Fresh air has a sedative, quieting effect. It stimulates the appetite and provides the cells of the body with more oxygen.

Sleep with your windows open at night. Avoid drafts and chilling. Whenever the weather will permit, lie out-of-doors.

No medicine is required. Take no medicine recommended by your friends. If your bowels become constipated, take three or four teaspoonsful of milk of magnesia at bedtime. If your appetite lags or your tongue coats over, take one-third of a glass of Pluto Water before breakfast for one or two mornings, then discontinue it. Do not stop eating unless you get an aversion for food; when this occurs, you may discontinue your lunches for a day or two until the nausea is gone.

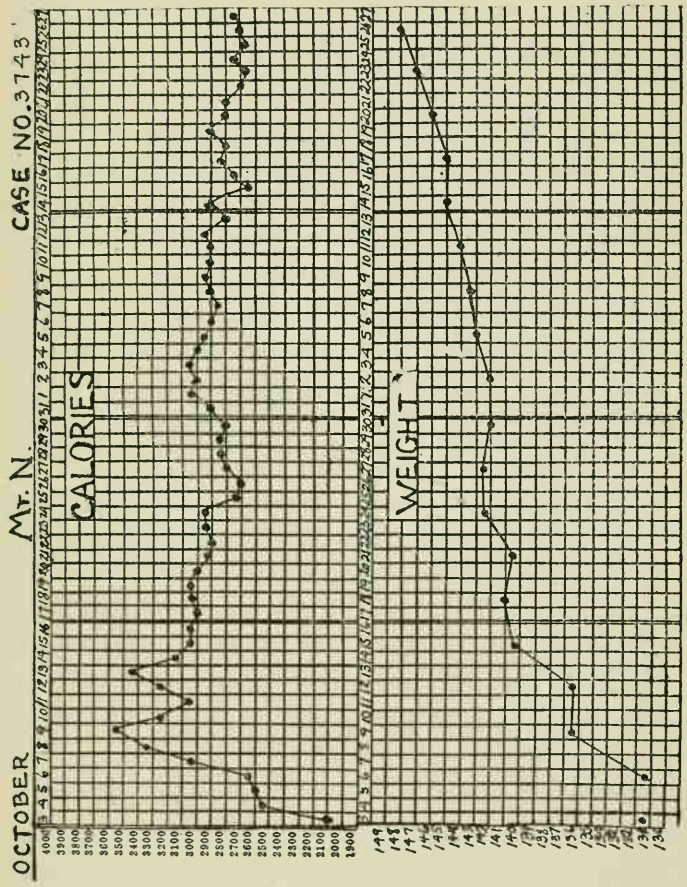
The key to the management of yourself is moderation, and the conservation of your energy. Remember that you are going to become entirely well, but that it takes time for Nature to build back your strength and overcome the toxic effects of the infection from which you are suffering. Remember to conserve your strength. Learn your limitations, and do not exceed the restrictions in the expenditure of your physical or nervous energy which experience has taught you to observe. Cultivate a cheerful, happy disposition, for you have nothing to worry about provided you manage yourself intelligently and obey your instructions. Many of your friends will complain that you are leading a lazy, selfish, introspective life, and that you need diversion; and they will try to persuade you that the treatment advised is a mistake. To such well-

meaning but unwise advice turn a deaf ear. State that you have confidence in your medical advisor and that you are following his instructions. By so doing you will slowly but surely overcome the slow-burning fires of a disease which is very insidious in its nature and prolonged in its course. With confidence in the diagnosis of your physician and with patience and perseverance to follow the course of management advised, your recovery is assured.

A caloric chart (see chart on following page) is given to the patient who is instructed how to calculate the amount of food eaten from day to day and to chart the same graphically. It is carefully explained to the patient that a gain in weight is an index of increased natural resistance and a loss in weight an index of lowered resistance; and that any person harboring a tuberculous lesion who persistently loses weight is in grave danger of a more active process developing. In this way the importance of nutrition is emphasized. The patient is instructed to report once a week, or once in two weeks or a month for a conference as to diet, bowels, gastric condition, etc., also to be weighed and receive further instructions.

The importance of the avoidance of tire or fatigue is emphasized (see instructions p. 53). At the close of each day the patient must have so managed himself or herself as to feel fresh,—not tired or exhausted. I oftentimes say, "Feel at the end of each day as if you could have done on that day

twice the amount of work which you actually did. Learn to live so as to husband your reserve



and keep within the income of your strength." The greatest enemy of the tubercle bacillus in the body

is fat. The next most powerful factor to fight the bacillus is a large surplus of physical and nervous reserve,—in other words, good spirits. Depressed states of body and mind, exhaustion, a played-out feeling are his allies. The importance of long hours of rest and sleep is emphasized for this reason.

Most of these patients are kept at their work provided they can regain their lost weight and hold it. Many can eat well and continue their work. Others are too exhausted by their daily occupation. These are advised to stop work, and take a vacation under restful surroundings until their lost weight is regained. By lost weight is meant that patients must build back to their maximum weight and a little more if possible. Some patients cannot do this without being put to bed in a sanatorium under rest and forced feeding. Only those who have lost much weight and are completely exhausted require such energetic measures.

In the dietary instructions, much emphasis is placed upon the foods containing a high caloric value and a small bulk. Each patient must be carefully studied from this point of view. It is rare, however, to find a patient who, under proper instruction and with sufficient patience on the part of the medical advisor, cannot be made to put on the weight required to place the body in a state of high resistance. Patients who cannot drink much milk, or perhaps cream, may be good bread and butter eaters. Some are heavy meat eaters, but do not

care for vegetables. These are directed to eat much meat and eggs. Others cannot eat fats, but are fond of potatoes, rice, cereals, corn, peas, etc. I rely to a large degree on butter as one of the most valuable fats. Almost all patients take butter well if it is not salted too much and many patients can take it unsalted. They are advised to eat as much as two or three pounds a week, putting it on their bread in chunks as if they were eating cheese. Cream is not so well borne by many, but some patients can digest cream well if it is not too rich. Heavy cream should be diluted. Cream, when it is well borne, contains a fat well-handled by the body and easily stored up. It is not a necessary article of diet and patients can gain well without either milk or cream when they have an aversion for either or both. Eggs can well be utilized,—either raw, beaten into milk and flavored as in an egg nog, or as an egg malted milk. Egg-nogs, chocolate malted milk drinks etc. are used more in the mid-forenoon and mid-afternoon lunches, and are omitted from the regular meals. The patients are instructed to eat three regular meals a day with the lunches between meals and at bedtime. When patients are eating heavily of fats, it is important that they be served with some sweets in the form of jellies and jams.

In order to get in the meals for the day, the patient must begin the breakfast early, at seven-thirty to eight A. M., the mid-morning lunch coming at

ten to ten-thirty, the noon meal at twelve-thirty, the mid-afternoon lunch at three to three-thirty, the evening meal at six to seven P. M., and the night lunch at bedtime. Where patients do not sleep well, a midnight lunch of a sandwich and a glass of milk or a cup of cocoa is served. This often helps them to sleep. Where women and men are engaged in work, they carry their lunches with them and eat at the assigned time.

In the matter of eating food, great emphasis is placed upon the calm and equable state of mind in which the meal is eaten. Some pains should be taken to explain to patients the abnormal states of gastric secretion caused by worry or high-tensioned nervous conditions, citing the experimental work of Beaumont upon St. Martin, of Pavloff upon dogs, and Cannon upon cats to give the patients a clear conception of the evil effects of thess nervous factors upon gastric secretion and gastric motility. For example, after a day's work they are instructed not to eat upon arriving at home, but to lie down for fifteen or twenty minutes in a relaxed state of body and mind before eating the evening meal. Furthermore, they are advised to avoid eating in crowded cafes, or where there is hurry and confusion. A knowledge of these details is of great assistance in helping the patient to consume large quantities of food. It is the exception rather than the rule for even the most stubborn case to fail to gain weight under proper instructions and supervision.

Patients are also impressed with the value of an optimistic, happy state of mind. They are instructed to coach themselves in this respect and learn to keep their thoughts upon the pleasant, comfortable experiences of life. When they find themselves in a keyed-up, nervous state with taut muscles and a tense feeling over the body (see instructions p. 54), they must sit or lie down, relax, and compose themselves. By so doing the circulation is steadied, the secretions of the body are poured out more normally, the blood-pressure is stabilized, and all the bodily functions put in a state of repose.

Most of these patients are alert, active, and most interesting persons. The tubercle bacillus often picks the flower of the race and why? Because those persons who are capable and ambitious utilize too much of their surplus energy in living and in work. They assume responsibility; they are the stable individuals of the race. Their general nutrition is below par and their bodily resistance (whatever we may mean by that term) is at a low ebb. In a given family of children, all exposed to tuberculosis, the lazy, indolent child, who cares little for lessons or work and loves the open air, developes the disease much less readily than the ambitious, conscientious child, who is well up in his class and helps with the family burdens. There is an important factor here in immunity and resistance which is recognized, but the modus operandi of which is little understood.

A most important factor in the treatment of these patients is to establish a vegetative state of being. They must for a while, until they are well, be like cows or cabbages. One of my patients with "The Tired Sickness" while lying in bed expressed the idea in this apt way.

> "I want to be a cabbage
> A-growing on a hill,
> A green and placid cabbage.
> Without no thought nor will."

The majority of these patients are not put to bed. They are treated as ambulatory cases provided they are able to build back their weight and succeed in establishing for themselves a proper mode of living and working. They do not disclose to their friends the nature of their ailment, because this knowledge in the possession of friends and relatives places an unsatisfactory atmosphere about the patient in which it is difficult for them to work out a cure. They are managed and treated as patients building-up their weight and physical strength. They are taking the "building-up cure." If they enter the hospital or sanatorium, they are taking the "rest-cure." This is an important point to bear in mind. The notion in the public mind relative to the infectious nature of tuberculosis without regard to the stage of the disease or the differentiation between the infectious and the non-infectious types, places unnecessary restrictions and embarrassing situa-

tions in the lives of these patients, which can and should be avoided. They are non-infectious cases, and should mingle in the family and in society without restrictions provided they are under medical observation and occasionally report for routine examinations. It is the exceptional case of this type that developes active, open tuberculosis recognized by the usual clinical signs (Case XVII). A small percentage of them, due to the states of lowered resistance induced by infectious diseases, such as influenza, or due to worry, or sorrow, or unusual business responsibility, etc. leading to loss in weight, develops active tuberculosis resulting in a fatal outcome. Such, however, is not the rule. If it were the rule, there would be less neurasthenia and more tuberculosis written into our diagnostic records.

I wish to say a word also with relation to exercise. While these patients are building back their weight, much exertion of any sort is not encouraged or required. It reduces weight, often causes slight rises in temperature, and produces an exhausted condition which is best avoided. After these patients have recovered their weight, they begin a slow hardening process with short walks, light calesthenic exercise, massage, etc. Bed patients should not have vigorous massage since it takes off weight. They are not bathed oftener than every other day, as frequent bathing also hinders the deposit of fat.

I have endeavored in this study to work out the symptom-pictures presented by tuberculous infections in the silent areas of the body. The existence in these persons of tuberculosis was established by the help of the specific tests. The interpretation of the complaints as tuberculous in origin in the absence of other disease processes, therefore, rests upon solid etiologic grounds. We have also been able to recognize the infection at a time in the life history of the organism when its presence could not have otherwise been detected with certainty. A larger conception of the symptomatology of this most common infection of man is now open to our view. A normal individual, sound of body, lives out his life unconscious of the working of his internal machinery. Complaints and abnormal sensations are usually indicative of disease, provided our knowledge is complete enough to detect its presence. It may not always be possible to know the special organ involved. Indeed, so far as the infection with the tubercle bacillus is concerned, it is not necessary to know this. In most of the patients forming the subject of this study, it was sufficient to know that a tuberculous infection existed; that no disease other than tuberculosis could be found; and that the toxic symptoms complained of were due to the presence of this organism. The results of the treatment, as shown in the illustrative cases, clearly indicates the wisdom of adopting this conception of the causal factor.

Until more specific measures have been discovered for the treatment of tuberculous infections, the valuable help which the clinician can give rests largely upon the recognition of the disease so soon as the patient begins to complain and presents himself for examination. It should not be necessary to wait for well-defined physical signs indicating the location of the process before therapeutic measures are instituted. Patients with "The Tired Sickness" ask for the bread of health. Failure to recognize the tubercle bacillus as a common causal factor for their complaints often leads us to give them the stone of chronic invalidism.

CHAPTER 6

ILLUSTRATIVE CASES

Case I.[1]—Mrs. L. W. B. Case No. 4532. Aged thirty, married, no children. Family history negative except one brother dead of tuberculosis. Personal history negative except childhood diseases. Well as a young woman; never had been sick. Married three years and has been occupied with her husband (a college professor) in teaching work. About one year ago she began running down in weight. At that time was spending many hours in the classroom and doing much outside church and social work. She became blue and depressed; cried easily and on slightest provocation. She was tired all the time and could not get enough sleep. She had an aching pain in back of neck, especially when tired; also had headaches. Lost her appetite. Chilled easily; hard to keep her hands and feet warm. She had a slight cough, especially when using her voice much. No sputum. Hoarsed-up easily after talking. Had no fever, no night-sweats. Became so nervous and worn out that she had to stop teaching. Consulted various physicians who told her she had neurasthenia and was overdoing.

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

The patient was a tall, well-developed woman. Some pigmentation over cheeks and face; long chest and abdomen; face round and full. She was much depressed and wept during the taking of the history. Knee-jerks very active; active dermatographia. Pupils reacted to light and accommodation. Some tenderness in neck and along spine and over abdominal aorta.

A careful physical examination was negative for organic disease. There was gastroptosis. Urine and blood examinations were negative. No sputum. Pulse 95. The temperature showed an occasional afternoon rise to 99.2 degrees. A searching physical examination of the lungs was negative, except roughened breath sounds in the left apex. No impairment of percussion note. No râles heard. Von Pirquet test positive. No evidence of lues.

While under observation in the hospital, the patient seemed a nervous, much depressed woman; complained of aching pains in the head, back, chest, and limbs. On the fifth day after admission, a subcutaneous injection of 2 mgms. of Koch's old tuberculin was given, with a marked positive reaction (temperature 102.8 degrees) within sixteen hours following injection. No Roentgen-ray examination of the chest was made.

The diagnosis of nervous exhaustion was given up. The questionable left apex and the positive tuberculin tests established the diagnosis of tuberculosis (focus probably in left apex) with chronic

tuberculous toxemia exhibiting symptoms of so-called neurasthenia. This patient was put through a building-up cure of three months during which time she gained forty pounds in weight. All of her exhaustion-symptoms subsided. She left the hospital well and has remained a well woman since,—namely, fifteen years.

Case II.[1]—Miss H. W. Aged twenty-one, single, white, stenographer. Admitted to the University Hospital Jan. 28, 1913, complaining of pains in abdomen, indigestion, dysmenorrhea, and nervousness. Family history negative except that her mother died after five months illness of probable tuberculosis of the lungs. One sister now has chronic cough. The patient has never been strong. Gives a long history of backaches, menstrual troubles, and recurring winter colds. In July, 1911, had a nervous break-down followed by a period of weakness and prostration. Finally became so weak and run-down that she had to stop work.

Her present complaints dated back over two years, and consisted of a long history of ill-defined pains in upper and lower back, abdomen, and left chest, associated with indigestion, eructations of gas, nausea, loss in weight, cold hands and feet, painful menstruation, and prostration and weakness.

The patient was a fairly well-nourished young woman, and talked in a low voice. Long chest and abdomen; color good; pupils reacted to light

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

and accommodation; knee-jerks active; palpable post-cervical lymph glands.

A thorough physical examination of this patient, including repeated examinations of the lungs, revealed no positive evidence of organic disease. The apex of the right lung was questionable. There was marked visceroptosis. Blood and urine negative. There was no sputum. Von Pirquet test was positive. Wassermann test not made. Temperature normal. Pulse 70 to 100. No positive diagnosis could be made. The patient was high-strung and nervous, and this fact together with the doubtful clinical findings led to the diagnosis of neurasthenia.

On the thirteenth day after admission, patient was given 5 mgms. of Koch's old tuberculin, with a typical positive reaction, (temperature 100.8 degrees) within twenty-three hours (see chart on following page). Roentgen ray examination of the chest twelve days later showed "diffuse infiltration of both lung fields, especially marked in the right." (Bissell.)

The diagnosis of neurasthenia was therefore, abandoned, and the diagnosis made of pulmonary tuberculosis with chronic tuberculous toxemia exhibiting symptoms of so-called neurasthenia. This patient was given a building-up cure of six weeks in the hospital, gaining twelve pounds in weight. All her tire and weakness disappeared. She reported three years later in fair health, but had to be careful about overdoing.

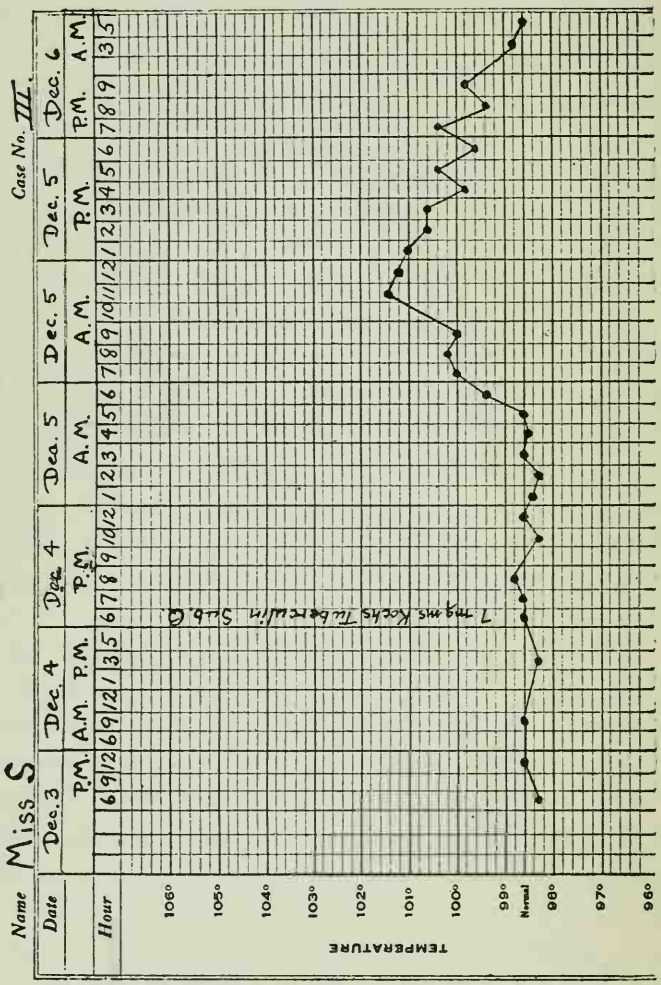
Name Miss H.W.
Case No. II.
Date
Hour
Feb. 24th P.M. A.M.
Feb. 25th P.M.
Feb. 26th A.M.
Feb. 26th A.M.
Feb. 26th P.M.
Feb. 27th A.M. P.M.
Feb. 28th A.M. P.M.
5 mgms Kochs Tuberculin Subc.
TEMPERATURE
106°
105°
104°
103°
102°
101°
100°
99°
Normal
98°
97°
96°

Case III.[1]—Miss S. Case No. 9322. Referred by her physician as a case of neurasthenia and admitted to Asbury Methodist Hospital Dec. 1, 1909. Aged twenty-three, living at home. Family history negative except that two sisters have died of tuberculosis of the lungs. She had never been a strong girl. Had always been very nervous and of late, on account of mental worry, had been bothered with a constant desire to take deep breaths. This deep breathing occurred during the day while she was awake; was not aware of it at night. It was present while the history was being taken. At times has had a slight cough which had always been considered a nervous cough. No sputum coughed up. Had not lost in weight. Occasionally had slight fever (99.2 degrees). No sweats, no chills. For the last week had complained of feelings of distress in the upper abdomen.

The patient was a well-nourished girl, sensible and intelligent. Seemed high-strung and fidgety. Good color. Long chest and abdomen. Pupils reacted to light. Knee-jerks very active tremor of eyelids. During the examination patient kept taking deep breaths in rapid succession, one after the other. The deep-breathing was more pronounced when she sat up than when lying down.

A painstaking physical examination of this case including a searching examination of the lungs, revealed no evidence of organic disease. Blood,

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.


Name Miss S
Case No. III.
Date
Hour
TEMPERATURE
106°
105°
104°
103°
102°
101°
100°
99°
Normal
98°
97°
96°
7 Tbgms Kochs Tubercul'n Sub. Q
Dec. 3
Dec. 4
Dec. 5
Dec. 6
P.M.
A.M.
P.M.
P.M.
A.M.
A.M.
P.M.
A.M.

urine, and gastric contents normal. Von Pirquet test positive. The abdominal aorta was pulsating and tender, and there was ill-defined tenderness over the upper abdomen, but no mass. The patient was repeatedly examined, but no conclusion could be arrived at.

On the seventh day after admission, patient was given 7 mgms. of Koch's old tuberculin and gave a typical positive reaction with a temperature rise to 101.5 degrees within sevnteen hours following the injection (see chart on following page). No Roentgen ray examination of the chest was made.

The diagnosis of neurasthenia was therefore, not confirmed. The history of exposure to tuberculosis in her family, her years-long symptoms of tire, the negative clinical evidence of organic disease, and the positive subcutaneous tuberculin test justified the diagnosis of tuberculosis (focus concealed) with chronic tuberculous toxemia. This patient was not kept under observation.

Case IV.—Miss Annabel K. Case No. 2012. Examination made February 23, 1921. Aged twenty-two years, single, living at home. Mother and father living and well. Three brothers and sisters living and well. Is the only child in her family who lacks endurance and plays out easily. No previous diseases. Tonsils removed four years ago with the idea of improving her general health, but without relief. She came for examination because of a lack of energy dating back five years

or more. Could never assign a cause for it. Had an uncomfortable feeling in her throat and much backache. Was bothered a great deal with cold hands and feet, also crying-spells. Her eyes became tired if she read much, but glasses did not help them. Had much menstrual pain and at those times might become hysterical. Had much difficulty in maintaining her weight. At one time, some years ago, she weighed one hundred and thirty-seven pounds. She then felt well. Her weight at the time of the examination was one hundred and sixteen pounds and she was still losing. She had occasional sweats at night.

On examination one noted a fairly tall girl with dark hair and eyes, fairly rounded full chest, and well-developed limbs. Nervous and apprehensive. Color fair. Teeth negative. Tonsils out. Marked tremor of eyelids with eyes closed. A thorough physical examination including a searching examination of the heart and lungs was negative for organic disease. Pulse 98, fair volume, regular. Temperature 99.4 degrees. Hemoglobin 78 per cent. Leucocytes 7,000. Differential leucocyte count normal. Urine negative. Blood-pressure 140 systolic, 78 diastolic. Von Pirquet test strongly positive. Subcutaneous tuberculin test (5 mgm. Koch's old tuberculin) positive, temperature rising to 100.4 degrees within twenty-eight hours.

The long history of nervous symptoms and lack of endurance, the absence of other organic disease

the positive skin and subcutaneous tuberculin tests justified the diagnosis of tuberculosis (concealed), focus not determined. The patient was placed upon a building-up cure, gained fifteen pounds in two months, lost most of her feelings of weakness and lack of endurance, and is now in fair health.

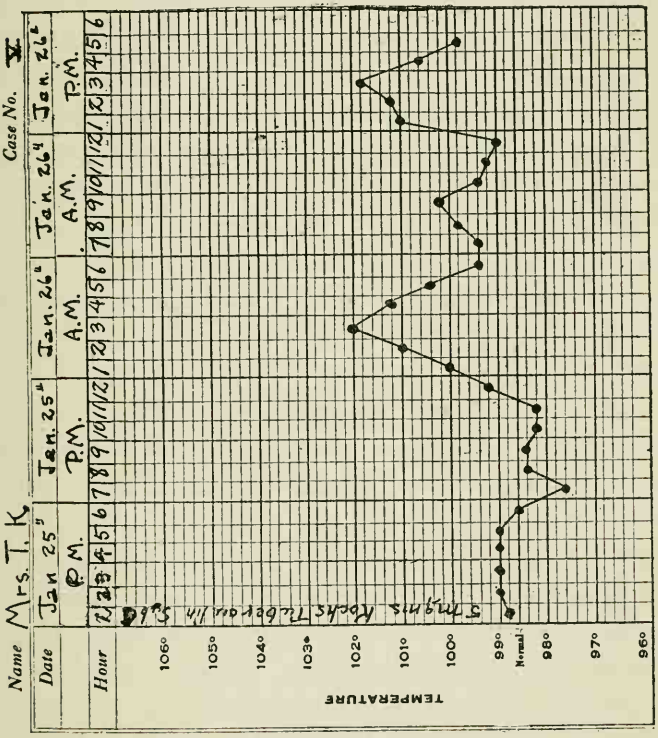
Case V.—Mrs. T. K. Case No. 3393. Examined Jan. 4, 1922. Aged twenty-seven years, married, two children living, three miscarriages. Family history negative except one sister who died of tuberculosis. The patient was eleven years of age and at home at the time of the sister's death. She gave a history of tonsillitis at 20 years, and of left-sided pleurisy at 21 years of age, also of influenza in 1918–19. She complained that everything was wrong; was always tired. She had a good deal of backache, indigestion, poor appetite, and restless sleeping. Was about ten pounds under weight. Began losing weight six years ago after her first baby was born. She did her own work and if she tried to do heavy work, such as washing, she got all tuckered out and was sick for a week. About a year ago she noticed a fullness in her throat and a sensation of pressure over her wind-pipe. She caught cold easily, and one month ago caught a cold and had not felt well since. Menstruation was scanty and painful. She felt palpitation of her heart at times; and a beating of her abdominal aorta gave her an uncomfortable sensation in the

upper abdomen. She had pain in her left chest in front whenever she caught cold.

The examination revealed a feeble, weak looking woman of slender build, high cheek-bones, prominent clavicles, long chest and abdomen, rather full eye. No von Graefe's sign. Pulse was rather fast, 100 to the minute. Temperature 98.6 degrees. A painstaking physical examination was negative for organic disease except a few fine pleuritic crackles in the lower left chest in front just outside the left cardiac area, and a systolic bruit at the apex of the heart not transmitted to the axilla and not associated with cardiac enlargement or an accentuated pulmonary second sound. The urine was negative. There was a mild grade of secondary anemia, hemoglobin 78 per cent. The metabolic rate test was plus 16. The differential leucocyte count showed no increase of mononuclears before or after the administration of thyroid extract. Blood-pressure was 116 systolic, 80 diastolic. The von Pirquet test was strongly positive and the subcutaneous tuberculin test (5 mgms. of Koch's old tuberculin) was positive, temperature 102 degrees within twelve hours, (see chart on following page).

The long history of complaints expressing physical and nervous exhaustion, the exposure to tuberculosis in her sister, the absence of evidence of other organic disease, the pleuritic crackles in the left chest, the positive von Pirquet and subcutaneous tuberculin tests, the negative evi-

dence for hyperthyroidism justified the diagnosis of tuberculosis (concealed). The patient was given a building-up rest-cure, gained ten pounds in weight, and recovered much of her physical and nervous stability. She still complains of the left chest pains.



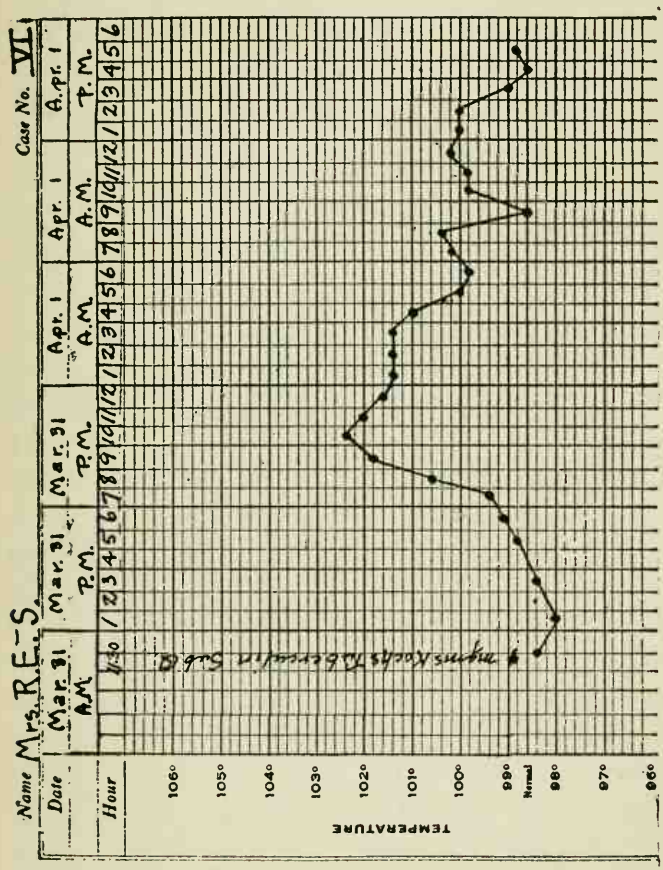
Case VI.—Mrs. R. E. S. Case No. 8707. Examination made March 22, 1916. Aged thirty years, married, no children. Father dead of heart disease. Mother dead of some bone disease.

Three sisters living, one brother living. One sister has had lung hemorrhages and one has tuberculosis of the throat.

Referred by her physician for a run-down condition with spells of weakness and faintness and loss in weight. Has been in an under-nourished state for some years. Is ambitious and talented but plays-out whenever she attempts to do the things she undertakes. Has insomnia at times. Appetite is good. Bowels regular. Usually gains weight in the winter but has failed to do so this last year. She had her last fainting spell a few days ago. She could assign no reason for it. Did not lose consciousness; simply felt weak and faint, and had to lie down. At times gets terribly depressed and melancholy over the state of her health. Has cold hands and feet. Much aching in the back of the neck when tired. Gets weak and trembly when she exerts herself. Has a slight clearing of her throat with cough, but no sputum.

The examination revealed a slender young woman of thin build, long chest and abdomen, light hair and eyes. Pupils reacted to light. Knee-jerks active. No incoordination. Marked tremor of finger-tips. Active dermatographia. A searching physical examination including a pelvic examination, was negative for organic disease. Urine and blood findings negative. Wassermann test negative. No fever. Von Pirquet test moderately positive. Subcutaneous tuberculin test (3 mgms.

Koch's old tuberculin) positive, temperature rising to 102.2 degrees within ten hours, (see chart).



The history of tuberculosis in the family, the complaints of long-standing exhaustion and sub-nutrition, the absence of organic disease on physical

examination, the positive skin and subcutaneous tuberculin tests established the diagnosis of tuberculosis (concealed), focus not determined. The patient was given a two months building-up cure, and gained fourteen pounds in weight. Her symptoms of physical exhaustion subsided, and she has remained well having been under observation since 1916.

Case VII.—Miss Magdelene S. Case No. 9291. Examined Dec. 22, 1914. Aged thirty-two years, single. Does office work. Family history negative. She comes of a family of nine children and is the only one who shows lack of endurance and nervousness. Has never been very strong. Had three attacks of lung fever as a child. All during her school days she would get spells of exhaustion and have to stay out a month or two. At the close of school each year she would be totally played-out and sleep most of the time for two or three weeks. Is bothered with chilblains, also with colds which cause her to cough. Will have about two of these colds each year. She has had throat trouble which removal of the tonsils did not relieve. Is a restless sleeper and talks in her sleep. Is bothered much with eye-tire and aching in the back of her neck. She has taken rest-cures from time to time. Has cold hands and feet. Is melancholy at times and cannot control her emotions. Has spells when she gets trembly and weak and goes to pieces. This is more likely to occur if she overdoes. Is about ten

pounds under weight. At one time weighed twenty pounds more than she does now and felt fine.

The patient was a young woman of normal build, long chest and abdomen, high cheek-bones. Active knee-jerks. Tremor of eyelids with eyes closed. Some tremor of finger-tips. Various physicians had examined her and told her she was nervous. A thorough physical examination was negative for organic disease. Temperature 98.4 degrees. Pulse 65. Blood negative. Wassermann test negative. Von Pirquet test positive. Subcutaneous tuberculin test (5 mgms. Koch's old tuberculin) positive, temperature rising to 102.5 degrees within twelve hours after the injection.

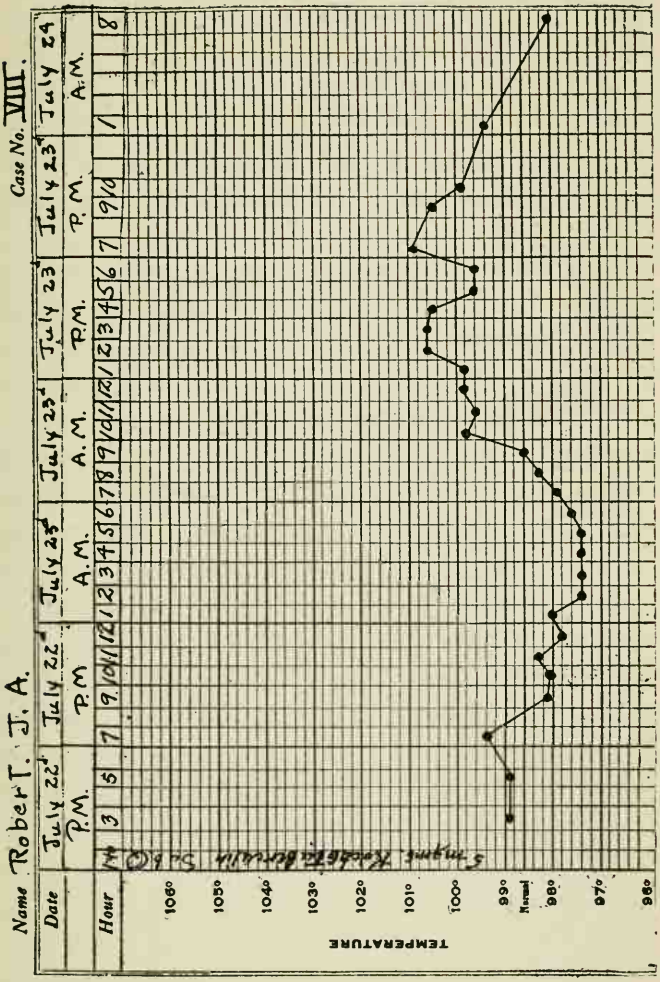
A diagnosis of tuberculosis, focus concealed, with chronic tuberculous toxemia exhibiting symptoms of nervous exhaustion, was made. The patient was kept under observation for a number of months. She made some gain in weight, which she could not hold. Her symptoms did not improve. A building-up hospital cure was advised, but patient refused to try it.

Case VIII.—Robert J. A. Case No. 3117. Examination made June 29, 1921. Aged twenty years, single, contracting engineer. Family history negative. Two sisters both thin and nervous. Personal history negative except repeated attacks of tonsillitis at ten years of age, (tonsils removed four years ago). Pneumonia at two years of age; recovery slow. No known exposure to tuberculosis.

Not strong as a child. Was nervous and had a peculiar type of breathing. For the last two or three years he has lacked strength. His appetite has been poor and he has had a little, dry cough. He feels best when out-of-doors. Is now working at indoor work which tires him. No headaches. No neckaches. Is at times depressed in spirits. No pains in his chest. No sweats at night. Is about 13 pounds under his best weight. About one year ago he kept a chart of his temperature and for several months ran a little fever, 99 degrees to 99.2 degrees in the afternoon. He says that even five years ago he had slight fever. No chills.

The patient was a slender, tall young fellow, mentally keen and highly constructed nervously. His color was a pasty white. There was marked tremor of the eyelids with the eyes closed and active dermatographia. A complete examination was entirely negative for organic disease. Pulse 70. Temperature 98.6 degrees Blood-pressure 114 systolic, 68 diastolic. Urine and blood negative. Von Pirquet test strongly positive. Subcutaneous tuberculin test (5 mgm. Koch's old tuberculin) positive, temperature 100.6 degrees within twenty-four hours (see chart on following page). X-ray examination of the chest showed old healed calcareous areas in both lungs.

The long history of lack of physical and nervous strength, the absence of the evidence of organic disease other than tuberculosis, the positive


Name Robert T. J. A.
Case No. VIII.
Date
Hour
July 22d P.M.
July 22d P.M.
July 23d A.M.
July 23d P.M.
July 24 A.M.
TEMPERATURE
Normal
Streptococcus Scarlatinae

skin and subcutaneous tuberculin tests—established the diagnosis of tuberculosis (concealed), focus not determined.

This young man has been under observation over two years. By careful living and conservation of his energy he has gained weight, lost many of his exhaustion-symptoms, and is able to carry on his business without fatigue.

Case IX.[1]—Miss M. L., aged 32, single, stenographer. Father died of tuberculosis of the lungs. Four sisters and one brother died of tuberculosis of the lungs. Never strong as a girl, subject to colds and bronchitis. Three years ago was in California for bronchitis one winter during which she gained twelve pounds in weight. For about two years the patient has had a clearing of her throat, more marked in the morning. She has lost ten pounds in weight during the past year. Appetite is poor. Is bothered much with sleeplessness. Has pains at her menstruation and now feels so weak and nervous that she has had to stop work. Had been examined by many physicians and lung specialists all of whom had suspected her of being tuberculous, but none of whom had been able to find evidence of tuberculosis in the lungs or elsewhere and had therefore diagnosed her case as neurasthenia.

She comes now for pains in her chest and precordial region which she has had for about a week. She has had pains also in the left chest off and on for

[1] Abstracted from J. A. M. A., Vol. LXIII, pp. 996–1001.

years. They shift about from one place to another. The pains are a dull ache, and the chest is sore to pressure. Occasionally the patient feels pains in axillæ, left scapula, and back. Deep breathing or cough does not aggravate them.

The patient is a fairly well-nourished girl, high-strung and neurotic. Color pale; light hair and eyes; high cheek-bones; long chest and abdomen. Pupils reacted to light and accommodation. Tremor of finger-tips. Knee-jerks active. A careful physical examination of this girl revealed no evidence of organic disease. A searching physical examination of the lungs was negative for tuberculosis. She had a moderate grade of gastroptosis. Sputum and urine examinations negative. Von Pirquet test positive. Blood-pressure 116 systolic. Pulse 90 to 100. Temperature normal.

Not being willing to accept the diagnosis of neurasthenia, and not being able to make the diagnosis of tuberculosis, the patient was subjected to an injection of 4 mgms. of Koch's old tuberculin and gave a positive reaction (temperature of 102 degrees) within eight hours after the injection was given.

The clinical diagnosis of tuberculosis (concealed) with chronic tuberculous toxæmia exhibiting symptons of nervous and physical exhaustion was then made. A building-up cure was advised but patient was unable to take it.

Case X.[1]—Miss L., aged twenty-five, Jewess, single, stenographer. Family history negative

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

except that mother died of tuberculosis when the patient was a child at home. Personal history negative except walking typhoid fever (?) five years ago. Operated on twice for pelvic displacements. The present history dates back six years and includes a long story of nervous symptoms with headaches, backache, neckache, insomnia, cold hands and feet, indigestion, cough, exhaustion, rest-cures, operations, treatment by osteopaths, Christian Scientists, etc. Insomnia and indigestion have been her most troublesome symptoms. She has been seen and examined by many physicians and the diagnosis of neurasthenia usually made. She has taken a number of rest-cures from which she would temporarily improve and go back to work only to relapse into a weak, prostrated state rendering her unfit for her occupation. She has lost forty pounds in weight in the last six years.

The patient was an ambitious, intelligent, bright young woman, with dark hair and eyes, high cheek-bones, long chest and abdomen, slender limbs. Pupils reacted promptly to light and accommodation. Knee-jerks active. Pulsating abdominal aorta. Active dermatographia. Marked tremor of eyelids with eyes closed. No exophthalmos, no von Graefe's sign, no enlargement of thyroid.

A painstaking physical examination of this patient revealed no evidence of organic disease. There was marked gastroptosis and bilateral nephroptosis. Blood, urine, and stomach examinations were

negative for organic disease. No Wassermann test made. Exploratory abdominal section negative for organic disease in stomach, gall bladder, appendix, or elsewhere. Searching examination of lungs revealed no evidence of tuberculosis. Von Pirquet test negative. Temperature showed an occasional rise to 99 degrees. Pulse 80 to 100. The clinical diagnosis of neurasthenia (so-called) seemed justified.

After the patient had been under observation for six weeks, and despite the negative von Pirquet test, the patient was given 4 mgms. of Koch's old tuberculin subcutaneously, with a typical positive reaction (temperature 101 degrees within twenty-four hours following the injection). The clinical diagnosis of neurasthenia was then abandoned, and the diagnosis made of tuberculosis concealed, with a chronic tuberculous toxæmia exhibiting symptoms of nervous and physical exhaustion.

Case XI.[1]—W. K., aged twenty-nine, male, single, American, carpenter, referred to the University Hospital Feb. 16, 1912, as a case of nervous dyspepsia and neurasthenia. Family history negative. No tuberculosis in the family. Denied veneral disease. Had mumps and smallpox. Denied exposure to tuberculosis.

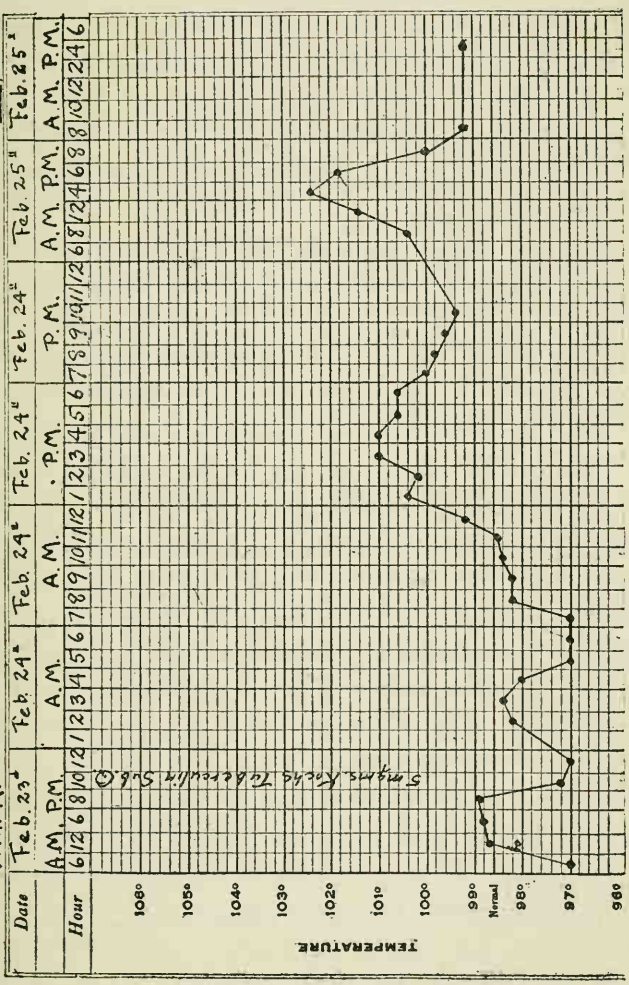
On Dec. 7, 1911, the patient began complaining of palpitation of the heart. Consulted a physician who examined his heart and pronounced it all right.

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

The attacks continued for a number of days until his stomach was washed out, since that time the palpitation has not bothered him. The patient had not felt well since the attack in December. Was bothered with belching of gas after meals, constipation, headaches especially at night. Felt weak and nervous. Slept poorly. Had frequent urination. At times had ringing in his ears. The patient had no cough. He had lost about seventeen pounds in weight since his sickness came on. Had not been able to work because he tired so easily.

The patient was a thin, spare man, poorly nourished. Color good. Answered questions promptly and to the point. Was nervous and apprehensive about himself. Pupils equal, reacted to light and accommodation. Knee-jerks active. Slight cyanosis of lips and finger-tips. Cervical glands just palpable.

A thorough physical examination of this patient revealed no evidence of organic disease, except a questionable area in the upper right chest anteriorly, below the clavicle. Here the percussion-note was slightly impaired, expiration somewhat prolonged, and a few fine crackling rales could at times be heard at the close of inspiration, close to the right sternal border in first interspace. The heart was negative. Blood examination showed a secondary anemia of mild grade. Urine and sputum negative. Von Pirquet test positive. Gastric analysis negative except an increased acidity. Pulse 60 to 80.


Name Wm. K.
Case No. XI.
Date
Hour
Feb. 23d
Feb. 24th
Feb. 24th
Feb. 24th
Feb. 25th
Feb. 25th
A.M. P.M.
A.M.
A.M.
P.M.
P.M.
A.M. P.M.
A.M. P.M.
TEMPERATURE
Normal
5 mgms. Acids Tuberculin Sub. ⊙

Temperature 97 degrees to 98.4 degrees. Roentgen ray examination of chest: "There is a rather marked thickening about the hilus of the right lung. A number of peribronchial lymph-nodes in both lungs. The right apex is distinctly more dense than the left." Roentgen diagnosis: Incipient tuberculosis. (Bissell.)

On the tenth day after admission patient was given 5 mgms. of Koch's old tuberculin, with a positive typical reaction (temperature 101 degrees) within sixteen hours following the injection (see chart on preceding page).

The diagnosis of neurasthenia could not be confirmed. The suspicious physical signs in the chest, the positive tuberculin reactions, and the Roentgen ray chest findings justified the diagnosis of tuberculosis of the right lung with chronic tuberculous toxæmia exhibiting symptoms of exhaustion. The patient left the hospital and could not be traced.

Case XII.[1]—Mrs. J, aged thirty-seven, married, one child. Family history negative for tuberculosis. Personal history negative except a miscarriage one year ago. The patient had been a healthy woman until one year ago when, following her miscarriage, she began losing in strength and weight.

She contracted la grippe about nine months ago which left her with a slight clearing of her throat. This continued for two months or more. It disappeared during the summer but reappeared

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

again in the fall. No sputum coughed up. For the last three months she had felt nervous and miserable. Everything, no matter how trifling, seemed like a mountain to her. She cried at the slightest provocation; was despondent and blue. The slightest exertion, mental or physical, tired her and she had to give up all her social duties and home cares. Was bothered much with aching in the back of the neck. Had had her eyes fitted repeatedly with glasses to relieve her headaches. Had cold hands and feet. Had no pains in the chest. Appetite was poor. She had lost ten pounds in weight in six months. The patient had been carefully examined by different physicians who told her she was nervous and should take a rest-cure.

The patient was a short, stockily built woman, with broad chest and short abdomen, dark hair and eyes. Mucous membranes rather pale. Well-nourished. Wept during the examination. Pupils reacted promptly to light and accommodation. Knee-jerks active. Marked tremor of eyelids with eyes closed. Active dermatographia. Pulse rapid, 120 to the minute. Temperature at office, 99.4 degrees. No exophthalmos. No von Graefe's sign. Some tremor of finger-tips.

A searching physical examination was negative for organic disease except that in the lower right chest anteriorly over the fourth and fifth interspaces a fine pleural friction-rub could be heard. Repeated examinations always disclosed the friction-rub in

this area. Urine and blood examinations negative. Wasserman reaction negative. Von Pirquet test positive.

Not being able to make a diagnosis, the patient was given 4 mgms. of Koch's old tuberculin and showed a positive tuberculin reaction (temperature 100.4 degrees within eighteen hours after injection was given). No Roentgen-ray examination of chest made. The friction-rub in the right chest and the positive tuberculin tests justified the diagnosis of tuberculosis of right pleura, with chronic tuberculous toxæmia exhibiting symptoms of so-called neurasthenia. The patient was placed on a two months building-up cure. She gained twenty pounds in weight, all her exhaustion-symptoms disappeared, and she has remained well since,—namely eight years.

Case XIII.—Mrs. C. N. Case No. 1740. Examined Sept. 1920. Thirty years of age, married, two children. Family history negative. When the patient was a child, her mother took her to visit a relative who had active tuberculosis of the lungs. She was there some days and slept with the relative.

She has had no serious diseases. Four years ago she had a cough all winter. At that time was doctored a year for nervous prostration. Had influenza in January, 1920. Has always been nervous and tires easily. She comes for a heart examination. Six months ago in the night was taken with a numb feeling in her legs and also in

her hands. She was unable to speak aloud and could scarcely get her breath. The attack passed off in two hours or so. On April 1 she got a second bad spell in the day. Was working about the house at the time. Felt as if she would drop. Got dizzy and nervous, her hands became numb, and she felt as if a great weight were on her chest. Since then she has had spells nearly every day. They come on about supper time but before eating. Was examined by a physician and treated for neuralgia of the heart. For a time was better, but now the old uncomfortable, smothery feeling is returning. Has now a sharp pain in the left chest over the heart. Has a choking feeling in her throat at times. She thinks there is some connection between the gas in her stomach and the spells.

The patient was a fairly well-nourished woman, light hair and eyes, color good. A thorough physical examination was negative for organic disease. The heart was negative. Pulse 106, regular, good volume. Blood-pressure 110 systolic, 85 diastolic. Temperature 99.4 degrees. Urine and blood examinations negative (hemoglobin 80 per cent). Wassermann test negative. Von Pirquet test strongly positive. Subcutaneous tuberculin test (4 mgms. Koch's old tuberculin) positive, temperature rising to 101.2 degrees nineteen hours after the injection. X-ray examination of the chest showed slight thickening of the lung shadows over

lower right chest. While the history of influenza just prior to the onset of her attacks suggested an influenzal myocarditis as the cause of the spells of which she complained, her long history of nervousness and tendency to play-out could not be accounted for on those grounds. The history of exposure to tuberculosis in childhood, the positive tuberculin-tests, and the X-ray chest findings clearly established the diagnosis of tuberculosis, focus concealed, possibly right lower pleura, with a low-grade tuberculous toxæmia causing long-standing nervousness and exhaustion. The patient was given a building-up hospital cure, gained fourteen pounds in weight, and had no heart attacks while in the hospital. She was examined in January, 1921 and found in a much improved state. Her old symptoms of tire and weakness were pretty much gone, but if gas collected in her stomach, she still had her spells of chest distress.

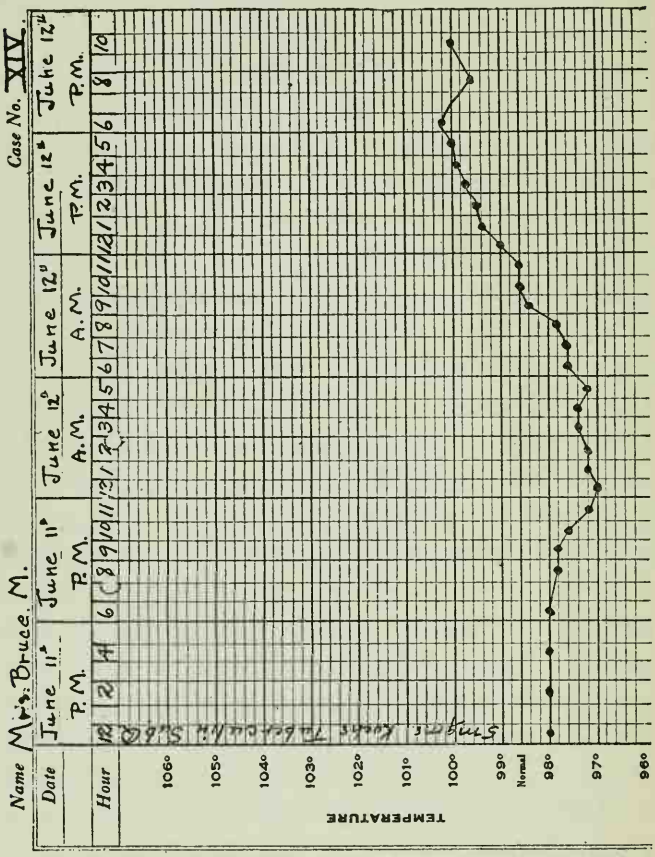
Case XIV.—Mrs. Bruce M. Case No. 1451. Examination June 7, 1921. Aged thirty-four years, married, one child. Personal history negative, except attacks of tonsillitis. Tonsils had been removed. She presents herself for a thorough examination. For the past two months has been tired and irritable, and little things upset her. She cries easily and at trifles. She has always been temperamental but cannot account for her exhaustion and lack of strength. She feels fine in an atmosphere of excitement, but wilts down like a rag after

it is over. Has been constipated for the last six months. Appetite is good. No loss in weight. No indigestion. No nocturnal urination. Does her own work at home and is interested in her church and lodge. Knows of no exposure to tuberculosis, except that about three months ago she played bridge one evening with a lady who had consumption. This person was coughing at the time.

The patient was a tall, robust looking woman, black hair and eyes, good color. Pupils reacted to light and accommodation. Knee-jerks active. No tremor of finger-tips. No adenopathy. Throat normal. A careful physical examination, including a searching examination of the chest, was negative for organic disease. Temperature 98.6 degrees. Pulse 70, good volume. Blood-pressure 98 systolic, 60 diastolic. Blood Wassermann test negative. Basal metabolic rate minus ten. Urine negative. Blood negative except a secondary anemia, hemoglobin 73 per cent. Von Pirquet tuberculin test strongly positive. Subcutaneous tuberculin test positive, temperature rising to 100.2 degrees within 30 hours following the injection of 4 mgms. of Koch's old tuberculin (see chart on following page). Fluoroscopic examination of the lungs showed slight density at right apex.

A diagnosis of tuberculosis (concealed), exhibiting symptoms of physical and nervous exhaustion was made. The patient was put upon a building-up cure, gaining seventeen pounds in

two months time, and is now,—three years since the observation, free of all her symptoms of tire.



Case XV.[1]—G. H. G., aged forty-two, male, white, single, referred to the University Hospital, April 30, 1912, complaining of headaches, backache, exhaus-

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001

tion on exertion, pains in stomach, and loss of appetite. The diagnosis of the referring physician was neurasthenia. Family history negative except that father died of quick consumption. The patient was at home at time of his father's illness. The patient had mumps at two years, typhoid fever at sixteen years, and malarial fever at thirty-four years.

The history of his present trouble dated back eight years and consisted of a long history of ill-defined abdominal pains, constipation, headaches, cold hands and feet, aching joints, nausea, poor appetite, and general weakness on exertion. Has not been able to work for two years. Has tried repeatedly but always played-out. Is very introspective. Talks in a low, feeble voice. No cough.

The patient was a rather poorly nourished man. Color fairly good, high cheek-bones, thin nose, long chest and abdomen, active knee-jerks. Pupils reacted promptly to light and accommodation. Active dermatographia.

An exhaustive physical examination including urine, blood, and gastric studies revealed no evidence of organic disease. There was marked gastroptosis. The urine contained a trace of albumen and an occasional hyaline and granular cast. No other evidence of nephritis. No arteriosclerosis. No enlarged heart. Blood-pressure 120. Wassermann test negative. Von Pirquet test positive. Temperature 97.8 to 99.2 degrees. Pulse 80 to 104. Patient was kept in the hospital forty-five days

and discharged much improved with the diagnosis of neurasthenia and nephritis (?).

On November 23, 1912, patient was readmitted with all the old symptoms of physical exhaustion and mental tire. He remained in the hospital fifty-six days and was again carefully studied. On the fourteenth day after admission, he was given a subcutaneous injection of 7 mgms. of Koch's old tuberculin, with a prompt positive reaction, temperature rising within twelve hours to 101.4 degrees (see chart on following page). Roentgen ray examination of the chest: "A diffuse cloudiness throughout both lung fields, slight thickening of the bronchial tree and a few soft lymph-nodes. No active tuberculosis of the lungs; the fibrosis is probably due to a former tuberculous process." (Bissell.)

The diagnosis of neurasthenia was abandoned and that of tuberculosis made, focus not determined, with chronic tuberculous toxæmia and low-grade nephritis.

Case XVI.[1]—Miss S., aged twenty-three, living at home. Good family history except that two sisters died of tuberculosis. Previous history reveals no serious diseases. She has never been a very strong girl and has always tired easily. Has had a slight nervous (?) cough for years; never coughed up any sputum. No loss in weight.

Consulted her physician ten days ago for indigestion, with pains in upper abdomen after meals.

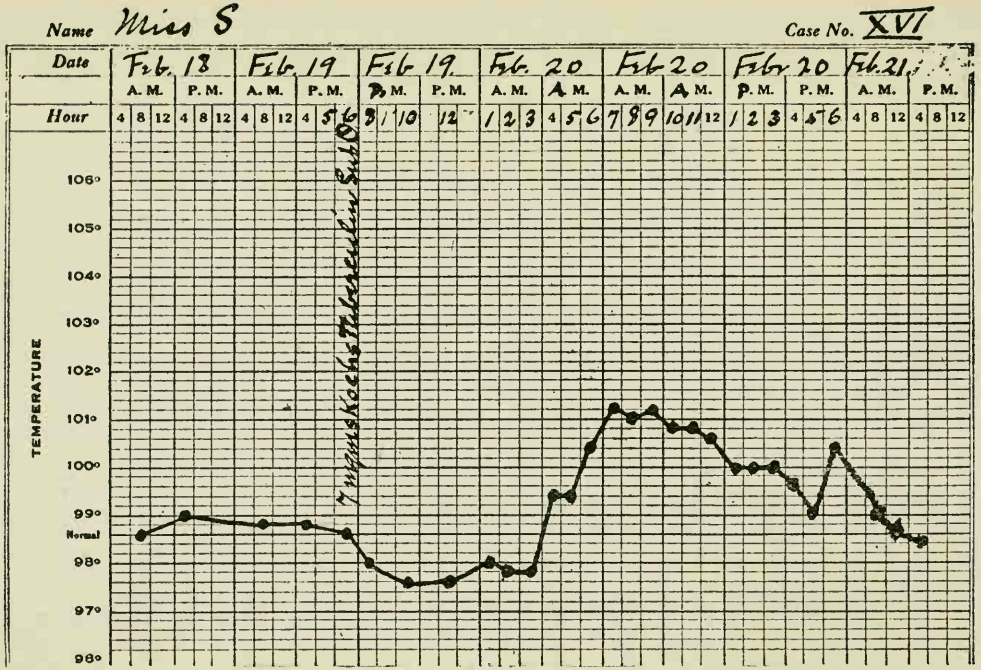
[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

Name G.H.G.
Case No. XV.
Date
Hour
Dec. 11th
A.M. P.M.
7 10 12 4 8 12
Dec. 12th
A.M. P.M.
7 9 12 1 3 5
Dec. 12th
P.M.
7 8 9 10 11 12
Dec. 13th
A.M.
1 2 3 4 5 6
Dec. 13th
A.M.
7 8 9 10 11 12
Dec. 13th
P.M.
1 2 3 4 8 12
Dec. 14th
A.M. P.M.
7 10 12 2 4 6
TEMPERATURE
105°
104°
103°
102°
101°
100°
99°
Normal
98°
97°
96°
Trigonum Acris Tuberculin Sub. Q.

At this time she began to be bothered with her breathing and was impelled constantly to take deep breaths. She felt very nervous and did not sleep well. No vomiting, no belching of gas. Bowels were constipated.

On examination one noted a young woman of good color, thin, and tall. Answered questions promptly and intelligently. Had a slight dry cough like a clearing of her throat. Coughed up no sputum. Pupils reacted to light and accommodation; knee-jerks active; marked tremor of the eyelids. During the examination the patient kept taking one long deep breath followed by two or three short superficial inspirations and then another full breath. This was worse when she sat up than when lying down. When asked why she did this, she said "It gets air into my lungs." The patient's limbs were constantly twitching and jerking. She seemed much depressed during the examination.

A careful physical examination of the patient revealed no evidence of organic disease. The abdominal aorta pulsated and was tender to touch. Searching examination of the lungs was negative for tuberculous lesions. Temperature showed an occasional rise to 99.4 degrees. Pulse 90. Urine and blood examinations negative. Von Pirquet test positive. The patient presented all the earmarks of a highly nervous girl, and the diagnosis of neurasthenia seemed justified.


Name Miss S
Case No. XVI
Date
Feb. 18
Feb. 19
Feb. 19.
Feb. 20
Feb 20
Febr 20
Feb. 21
A.M.
P.M.
Hour
4 8 12 4 8 12 4 8 12 4 5 6 9 10 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 4 8 12 4 8 12
TEMPERATURE
106°
105°
104°
103°
102°
101°
100°
99°
Normal
98°
97°
96°
1 mgm Koch's Tuberculin S.C.

On the eighth day after admission to the hospital, patient was given 7 mgms. of Koch's old tuberculin and gave a positive typical reaction (temperature rise 101.2 degrees within thirteen hours following the injection (see chart on preceding page). A diagnosis of concealed tuberculosis was made, focus not determined.

This patient was placed on a building-up cure at home. She gained rapidly in weight under forced feeding, her exhaustion-symptoms subsided, and she has remained in good health.

Case XVII.—Mrs. E. T. L., aged thirty-two, married, two children. Family history negative except that one sister died of tuberculosis. The patient was at home at the time of the sister's illness. She was never very strong as a child, but grew to maturity without serious illnesses and was fairly well until after the birth of her first child six years ago. At that time she recuperated slowly and was bothered much with nervous depression, indigestion, backache, and neckache. Ever since that time the patient has had to be very careful of her strength. The slightest unusual mental or physical exertion tired her. She cannot read without headaches. Entertaining friends at dinner sends her to bed exhausted. If she eats under excitement or in a hurry she is bothered much with belching of gas. She has a persistent aching in the back of her neck which is worse whenever she overdoes. Her voice tires easily and becomes hoarse if she talks much.

Has a persistent clearing of her throat which is worse when she is tired. She is good-for-nothing most of the time; is discouraged and blue because she cannot do what other women do. Her children annoy and tire her. She worries over trifling annoyances in her home life. All her small household cares seem like mountains to her. Even visiting with her friends leaves her with a nervous, weak feeling. Still she keeps up and drags herself about. She is sensitive to changes in temperature and is bothered much with cold hands and feet. She has been seen and treated by various physicians for neurasthenia.

The examination revealed a rather tall, intelligent woman, fairly good color, light hair and eyes, high cheek-bones, nervous and high-strung. Long chest and abdomen. Marked tremor of eyelids when standing with eyes closed. Active knee-jerks. Pupils reacted to light and accommodation.

A searching physical examination showed no evidence of organic disease outside of a pleural friction-click at the close of inspiration over the third and fourth interspaces on the left side anteriorly. No râles heard in this area. No impaired percussion-note. No fever. Pulse small, 95 to the minute. The patient had a moderate grade of gastroptosis and a movable right kidney, readily palpable. There was some tenderness over abdominal aorta. Urine, stomach contents, and blood examinations negative for organic disease. Coughed up no sputum. Von Pirquet test positive. No subcutaneous tuberculin test made.

The long history of nervousness, the absence of well-defined symptoms of organic disease, and the negative laboratory findings, led to the diagnosis of neurasthenia (so called) with a left-sided, dry pleuritis.

The patient was placed on proper treatment for her physical and nervous exhaustion and inproved steadily, but after a time an occasional fine crackling rale could be heard at the tip of the left apex, anteriorly and posteriorly. The râles appeared and disappeared. They were not always present. Finally, after patient had been under observation a number of months, a small quantity of sputum was secured which contained tubercle bacilli.

The diagnosis of neurasthenia was then abandoned and that made of tuberculosis of the apex of left lung, tuberculosis of left pleura, and chronic tuberculous toxæmia exhibiting symptoms of so-called neurasthenia.

Under a prolonged building-up cure this patient gained twenty-five pounds in weight and the process in the left apex became quiescent. She remained under observation six years.

Case XVIII.[1]—Miss Ruth S. Case No. 3631. Examined April 17, 1922. Aged twenty-five, single, school-teacher. Family history negative except an aunt with pulmonary tuberculosis, whom the patient frequently visits. She had been remarkably free of disease except typhoid fever at 12 years of

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

age. She has, however, never been strong and has had to be careful about over-doing. Comes for an examination to determine why she tires so easily and lacks endurance. Altho she has been teaching six years, she always ends the year almost played-out, and it takes all her summer vacation to get into condition for her next year's work. Is bothered much with cold hands and feet. Has a capricious appetite. Has not lost weight and is now at her normal weight. Is a good sleeper. Has no cough. Menstruation is regular and at times painful. Her chief complaint is her tendency to play-out easily. She feels best when she lies around and does nothing.

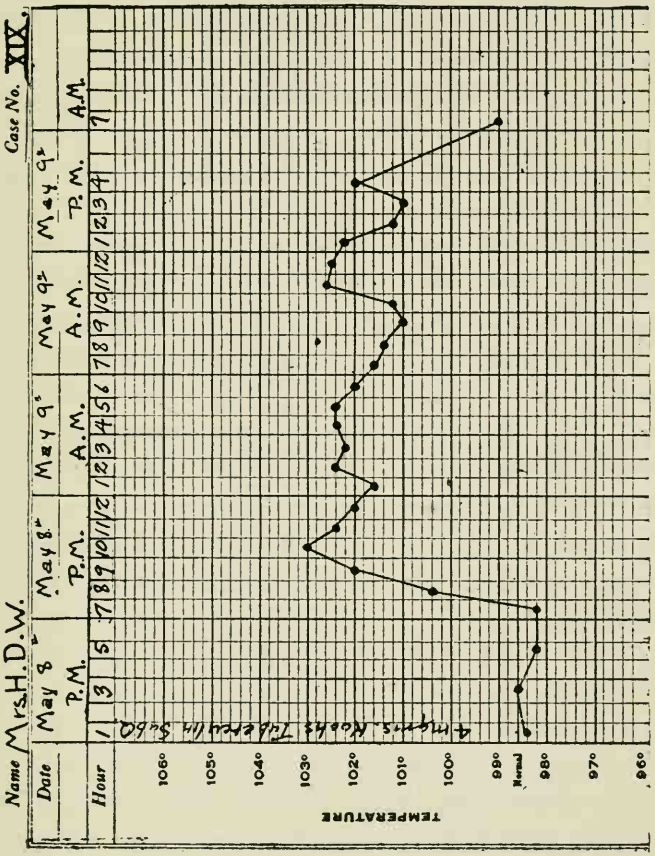
The patient was a tall, slender girl. Slightly full thyroid. No von Graefe's sign. No tremor of the finger-tips. No exophthalmos. The physical examination was negative for organic disease except a few fine crackles in the apex of the right lung above the clavicle. Pulse 70, regular. Temperature normal. Blood-pressure systolic 116, diastolic 80. Urine negative. Hemoglobin 72 per cent. Differential leucocyte count showed 40 per cent of large and small mononuclears. Metabolic rate was plus four. Von Pirquet test positive. Subcutaneous tuberculin test (5 mgms. Koch's old tuberculin) positive.

A diagnosis of tuberculosis (probably of right pleura) with secondary anemia and tuberculous toxemia expressing symptoms of tire and lack of

endurance, was made. The patient was instructed to conserve her energy and eat to put on weight. Her anemia was corrected with Blaud's pills. She reported in three months a gain of ten pounds and much relief from her tired symptoms.

Case XIX.—Mrs. H. D. W. Case No. 9840. Examined May 1, 1916. Forty years of age, married, no children, no miscarriages. Family history negative except that mother died of apoplexy. Never strong as a child. She was considered nervous, and played-out easily after any undue exertion or nervous strain. When a girl eighteen years of age, she had a left-sided pleurisy. Was very sick for weeks. Two or three years later a growth under the skin on the left chest in front was removed and pronounced tuberculous. She had been under a nervous strain for years, looking after her sister's children. She complains much of backache, lack of endurance, spells of melancholy and depression. She says she does not cry because she is ashamed to. She dreads meeting people because she is so exhausted afterwards. She is under weight and cannot build her weight up. She does her own work but is so tired when afternoon comes that she must lie down for two or three hours to accumulate strength for the rest of the day. Feels best in the latter part of the day. Has been examined at various times but no cause discovered for her lack of strength and endurance. Says it

disgusts her to feel that she must be constantly protecting herself against over-doing.



The patient was a nervous, high-strung woman of normal build. Marked tremor of the eyelids with the eyes closed. Active dermatographia.

Active reflexes. Intelligent and described her symptoms with exactness. A careful physical examination was negative for organic disease outside of the signs of a thickened pleura in the left lower chest laterally and posteriorly. Pulse 90, regular, good volume. Temperature 98.6 degrees. Blood-pressure systolic 130, diastolic 88. Wassermann test negative. Von Pirquet test strongly positive. Subcutaneous tuberculin test (4 mgms. of Koch's old tuberculin) positive, temperature rising to 103 degrees within nine hours following the injection, (see chart on preceding page).

The diagnosis of tuberculosis (probably of left lower pleura) with a low-grade, chronic tuberculous toxæmia, expressed in symptoms of so-called neurasthenia, was made. The patient was given instructions to build-up her weight and conserve her physical and nervous strength. She gradually increased her weight by ten pounds and, by careful living over the last seven years, has regained her normal strength and overcome her exhaustion-symptoms.

Case XX.—Mrs. N. R. D. Case No. 5366. Examined in January, 1913. Twenty-four years of age, married, one child. Mother had tuberculosis of the lungs years ago and recovered. Scarlet fever at sixteen years. For eight months after the birth of her child, three years ago, was in bed with exhaustion. Her physician could not establish a diagnosis. She has never been strong since the

sickness three years ago. Gets so tired and weak she can hardly do her work. She drags around from day to day in a miserable state. If she exerts herself, her heart palpitates. She has lost considerable in weight. Has trouble with indigestion at times especially if she eats when overly tired. Has no cough. At times she has a distressing pain in the back of her neck. Feels best when she lives quietly and away from the excitement of the city. Meeting people keys her up and she feels a gone, let-down feeling after going to a dinner party or out socially.

The patient was a tall, spare woman. Mucus membranes pale. Dark hair and eyes. Long chest and abdomen, slender limbs. Knee-jerks very active. Marked tremor of eyelids with eyes closed. No incoordination. A searching physical examination was negative for organic disease. Urine and blood negative. Von Pirquet test positive. Subcutaneous tuberculin test (5 mgms. of Koch's old tuberculin) positive, temperature rising to 102.5 degrees thirteen hours following the injection.

A diagnosis of tuberculosis, focus not determined, with tuberculous toxæmia exhibiting symptoms of weakness and exhaustion, was made. The patient was put upon a building-up hospital cure and small doses of tuberculin once a week. She made a ten pound gain in weight in two months time and left the hospital much improved. One and one-half years later she reported for examina-

tion for a sharp pain in her larynx. She had held her weight and most of her exhaustion-symptoms had disappeared. The physical examination revealed no cause for the pain in the larynx.

Case XXI.—Miss La D. Case No. 10049. Examined August 15, 1912. Twenty-nine years, single, school teacher. Family history negative. Had pneumonia as a child, also scarlet fever. She has been a very nervous person since childhood. She comes complaining of headaches, with nausea and vomiting. These are worse before or after her menstrual periods. She has also a burning sensation in her stomach when she wakens in the morning. Is a poor sleeper. Eyes tire easily if she uses them much. Has excessive menstrual flow. Always feels weak and prostrated after her menstruation. At times her heart beats fast and she cannot sleep because of it. Her weight is fifteen pounds under normal. She is introspective and depressed, especially at times. Has had dreams which waken her with a fright. Is ambitious and willing to work, but any unusual effort tires her out and she feels of no account for days.

The patient was an intelligent young woman of good color. The reflexes were active. There was a marked tremor of the eyelids with the eyes closed. Very active dermatographia. No exophthalmos. No enlarged thyroid. No von Graefe's sign. Some tremor of the finger-tips. A painstaking physical examination was negative for organic disease, except

a few fine pleuritic crackles in the lower left chest posteriorly. Pulse rapid, 120. Temperature 99.8 degrees. Blood, urine, and gastric contents examinations negative. Wassermann test negative. X-ray of teeth negative. Von Pirquet test positive. Subcutaneous tuberculin test (7 mgms. Koch's old tuberculin) positive, temperature rising to 100.6 degrees within twenty-seven hours following the injection.

The diagnosis of tuberculous pleuritis of the left pleura was made, with chronic tuberculous toxæmia exhibiting symptoms of long-standing exhaustion. A building-up cure was advised but not undertaken until January, 1915. The patient gained no weight but left the hospital somewhat improved. She was kept under observation until June, 1918, but her symptoms remained much as at first.

Case XXII.—Mrs. C. H. B. Case No. 3939. Twenty-seven years, married, one child. Examined November 7, 1922. Family history negative. Tonsils removed seven years ago. She has had hay fever and asthma from time to time. Was operated on for gall bladder and appendiceal trouble in 1918. The patient had never been very strong and has had to be careful about the expenditure of her strength for years. Two years ago, after the birth of her child, she did not recover her strength and felt tired and weak. This weakness she has never been able to overcome. About two months ago she developed a sharp pain in her right chest,

with fever of 102 degrees. This has now disappeared. Has a tickling, irritated feeling in her throat which prompts her to keep clearing it. Is much depressed at times and has crying-spells without any good reason. Whenever she tries to entertain friends or do anything socially she tires out and has to go to bed for a day or so and rest up. Never has had much endurance even as a child. Sleeps poorly. Bowels constipated. Has a peculiar feeling in her head as if something were forming and breaking. Has a weak stomach and food distresses her, especially if she eats when tired. Is fifteen pounds under her best weight.

The patient was a woman of short stature, slender build, dark hair and eyes. Trembly and nervous. A careful physical examination was negative for organic disease except the heart findings. The heart was slightly enlarged and a systolic bruit was heard at the apex, somewhat transmitted toward the axilla. It was heard over the body of the heart. No accentuation of pulmonary second sound. Pulse of good volume and regular, 86 to the minute. Temperature 99.4 degrees. Blood-pressure 106 systolic, 68 diastolic. Blood and urine negative. Wassermann test negative. Von Pirquet test positive. Subcutaneous tuberculin test (4 mgms. of Koch's old tuberculin) positive. Stereoscopic roentgenograms of the chest showed slight increased density in apices of both lungs and a few deposits at base of the left lung.

A diagnosis of tuberculosis, with a low-grade tuberculous toxæmia causing exhaustion-symptoms and chronic myocarditis was made. The patient was given a three months building-up cure, gaining twenty-seven pounds in weight. She has recovered her normal physical and nervous force and, if she lives within the income of her reserve strength, she feels well.

Case XXIII.—Miss C. Case No. 499. Examined in June, 1918. Age thirty-five, single, school-teacher. Father dead of heart disease. One brother has tuberculosis of the bone. The patient has had the usual childhood diseases. She was operated on for chronic appendicitis eight years before this examination. Tonsils were removed three years ago. In the fall of 1917 she had a prolonged fever for a month's time, the temperature going to about 99.5 degrees each day. The patient comes for pain in the neck and back and left chest, soreness of the scalp, a numb feeling in the back of the neck, and a weak, tired feeling especially if she overdoes. Has been this way for seven years and is getting worse. She has been spending eighteen to twenty hours a day in bed all winter but feels no better. She gets dizzy at times and has terrible nervous spells at night, waking with aching and pain in the back and head. Is badly constipated. Is much depressed and cries easily. Her hands and feet are cold. Has no reserve strength and tires out easily under the ordinary

demands of living. Has not lost weight. Eyes tire easily. Meeting people exhausts her. She stopped teaching one year ago because she felt so miserable.

The patient was a tall, fairly well developed young woman. Her color was good. Temperature normal. Pulse 78, regular and good volume. A thorough physical examination was negative for organic disease except a few fine pleural crackles in the apices of the right and left lungs and a systolic bruit at the apex of the heart, not transmitted, and not associated with an accentuated pulmonary second sound. Blood-pressure systolic 110, diastolic 78. Urine and blood negative. Blood Wassermann test negative. Gastric contents normal. Von Pirquet test strongly positive. Subcutaneous tuberculin test (5 mgms. of Koch's old tuberculin) showed a delayed positive reaction, temperature rising to 99.8 degrees thirty hours after the injection. Stereoscopic chest plates showed pleural thickening in left upper chest.

The diagnosis of neurasthenia, previously made, could not be confirmed. The long history of exhaustion-symptoms, the lack of evidence of organic disease other than tuberculosis of the pleura, the positive tuberculin tests, the X-ray lung findings, established the diagnosis of tuberculosis, probably of right and left upper pleuræ, with tuberculous toxæmia expressing itself in the symptoms of so-called neurasthenia. The patient was

advised to put on weight and conserve her physical and nervous strength. She reported last in June, 1922. Had gained fifteen pounds in weight. Most of her old symptoms of tire had disappeared. If she was careful n t to overdo, she felt well.

Case XXIV.—Mrs. James R. Case No. 8495. Examination June 2, 1915. Twenty-nine years of age, married, two children. Family history negative except one brother and one sister dead of pulmonary tuberculosis. She has never had any serious diseases. No pneumonia or pleurisy. Does not catch cold easily. She comes for a tired, weak feeling. It has bothered her off and on for years, but has been much worse since March, 1915, at which time she had an attack of la grippe. She feels so weak and played-out that it is almost impossible for her to do her daily work. She is never hungry. Is bothered much with cold hands and feet, headaches, and neckache. Her voice tires easily and she has to keep clearing her throat if she talks much. She has no cough. Of late, has been having fleeting pains in her chest, now in one place, now in another. She has lost eight to ten pounds in weight in the last three months. She belches considerable gas from her stomach especially in the morning.

In appearance, the patient was a young woman of slender build and medium stature. A careful physical examination was negative for organic disease. There was gastroptosis and a right-sided

dislocated kidney. The percussion-note was a trifle impaired in the right upper chest anteriorly. No rales or pleuritic crackles heard in this area. The pulse was 90 and regular. The temperature was 99.2 degrees. Von Pirquet test strongly positive. Subcutaneous tuberculin test (4 gms. of Koch's old tuberculin) positive, temperature rising to 100.6 degrees within twenty-four hours following the injection.

The diagnosis of tuberculosis (focus concealed) was made upon the history of exposure to tuberculosis in her family, the symptoms of tire and lack of endurance, the absence of other organic disease and the positive skin and subcutaneous tuberculin tests. Upon rest and forced feeding, this patient gained twelve pounds in weight and left the hospital in one month much improved.

Case XXV.—Mr. M. W. McP. Case No. 3427. Examination made Feb. 16, 1922. Thirty-seven years, married, one child. Accountant. Family history negative except father died of gall-stones. Four brothers and three sisters living and well. The patient has had no serious diseases except in 1908 when he had a mild attack of articular rheumatism. About twenty years ago he visited at a house where four persons had died of pulmonary tuberculosis. He comes for pains in the upper abdomen and lower chest. Has been having them for a year or more. They seem to come on without any apparent reason. Has had pains also in his

shoulders and neck. The pains flit about, first in one place and then in another. He also feels uncomfortable in his stomach and upper abdomen. Has no nausea and no vomiting. No soreness in the abdomen. Exertion does not bring on the pains. Exposure to drafts of cold air or chilling makes them worse. Has no cough. Bowels are constipated. Appetite fairly good. Is about seven pounds under weight. Sleeps fairly well at night.

A searching physical examination revealed no evidence of organic disease except some dry pleuritic friction-crackles in the apices of both lungs, above the clavicles. These were fixed and recurred at each examination. Temperature 99.8 degrees. Pulse 80, regular, good volume. Blood-pressure 130 systolic, 70 diastolic. Urine and blood examinations negative. Gastric analysis showed some hyperacidity, free HCl. 43, total acidity 61. X-ray examination of the stomach negative. X-ray examination of the lungs showed the left apex slightly denser than the right. Von Pirquet tuberculin test strongly positive. Subcutaneous tuberculin test (7 mgms. of Koch's old tuberculin) showed a moderate positive reaction, temperature rising to 101 degrees within twenty-four hours following the injection.

A diagnosis of tuberculosis, probably of the right and left upper pleuræ, was made, exhibiting symptoms of wandering chest- and upper abdomen-pains. The patient was not kept under observation.

Case XXVI.—Miss E. J. H. Case No. 1658. Examined July 3, 1920. Thirty-nine years, single, stenographer. Family history negative except that father died of cancer of the kidney. Previous history negative except repeated attacks of left-sided pleurisy, also frequent attacks of tonsillitis as a child. For the last six or seven years has had a tendency to catch cold easily. The patient comes on account of nervousness and a run-down condition. She has been bothered for years. When under strain of work she is all keyed-up and panicky. Is in a quiver all over and cannot eat. This condition is becoming worse. From time to time she is bothered with a pain in the lower left chest in front. This is worse when she takes a deep breath. Sleeps a restless sleep and wakens in the morning all tired out. Has cold hands and feet. Appetite is good. Bowels very constipated. Has lost about five pounds in weight. When she catches cold, has a cough and coughs up yellowish sputum. Has never coughed blood. She has had painful menstruation for years, cured by dilatation of the cervix.

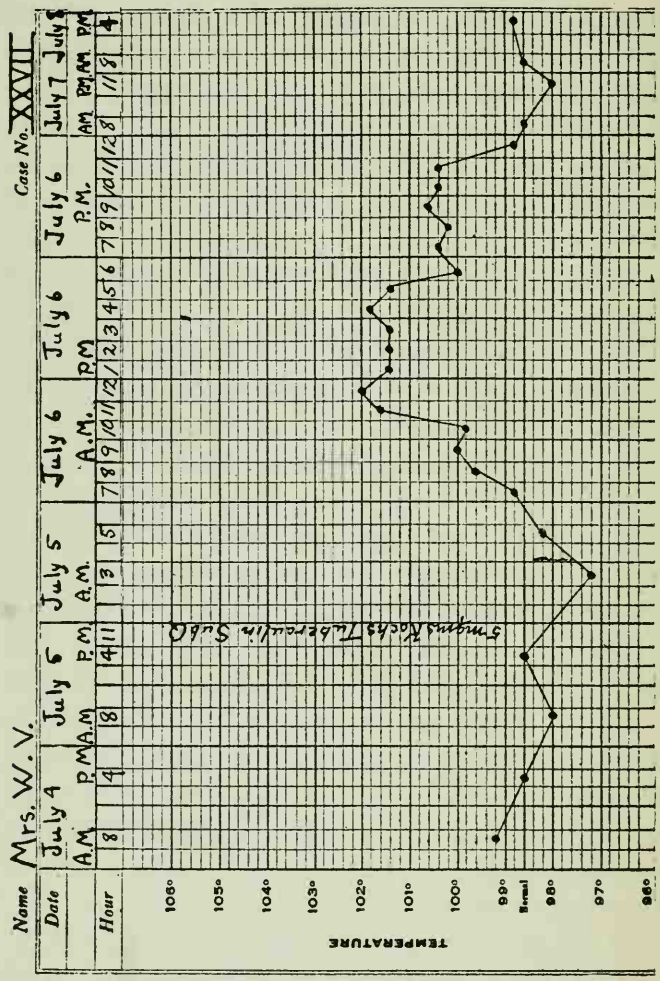
The patient was a well-developed and fairly well-nourished young woman. Her color showed some anemia. Devitalized teeth. Tonsils negative. A careful physical examination revealed a soft systolic bruit at apex of heart, not transmitted to axilla, not associated with an accentuated second sound. There were fine pleuritic crackles at the

apex of the right lung and in the base of the left lung in the midaxillary line above the diaphragm. Pulse 66, regular. Temperature 99.2 degrees. Blood negative except hemoglobin of 75 per cent. Urine negative. Sputum negative for tubercle bacilli. Von Pirquet test strongly positive. Subcutaneous tuberculin test (5 mgms. of Koch's old tuberculin) positive. X-ray chest examination showed increased density in left apex. The diagnosis of tuberculosis, focus probably in the left pleura, with a chronic tuberculous toxæmia exhibiting symptoms of physical tire and nervous exhaustion, was made. The patient was advised to give up her work for six months, add to her weight, and conserve her physical and nervous energy. She reported three months later with some gain in weight and a marked improvement in all her symptoms.

Case XXVII.[1]—Mrs. W. V., aged twenty-three, married, housewife, one child, referred to the University Hospital June 2, 1913, complaining of headache, dizziness, indigestion, loss in weight, backache, irregular and painful menstruation, and tenderness in the lower abdomen. Her symptoms dated back two and one-half years. Family history negative. Previous history negative except whooping-cough as a child.

The patient was carefully studied for sixty-three days in the surgical service of the hospital and then referred to the medical service with the diagnosis

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.


Case No. XXVII
Name Mrs. W. V.
Date
Hour
July 4
July 5
July 6
July 7
July 8
A.M.
P.M.
TEMPERATURE
Smear Positive Tuberculin Subc

of neurasthenia. After her transfer, the patient was again examined. She was a tall, rather poorly nourished woman, high cheek-bones, long chest and abdomen, color slightly anemic, active dermatographia.

A thorough examination including urine, blood, gastric, and Roentgen-ray chest study revealed no evidence of organic disease. Wassermann reaction negative. Von Pirquet test positive. Pulse 80 to 90. Temperature normal with an occasional rise to 99.4 degrees in the afternoon. The patient exhibited the ear-marks of a highly neurotic woman, and the provisional diagnosis of neurasthenia was concurred in.

On the twenty-fourth day after admission to the medical service, the patient was given 5 mgms. of Koch's old tuberculin, with a typical positive reaction within twelve hours following the injection (temperature rising to 101.6 degrees) (see chart on preceding page). The diagnosis of neurasthenia was abandoned. The presence of the positive tuberculin reactions justified the diagnosis of concealed tuberculosis, focus not determined, with chronic tuberculous toxæmia exhibiting the symptoms of so-called neurasthenia. This patient was given a building-up cure, gaining fifteen pounds in two months time. She left the hospital free of her symptoms.

Case XXVIII.[1]—Miss I. P. Aged twenty-four, Scandinavian, single, white, housekeeper. Admit-

[1] Abstracted J. A. M. A. Vol. LXIII., pp. 996–1001.

ted to the University Hospital Oct. 26, 1913, complaining of shortness of breath, headaches, precordial pain, lassitude, and weakness on physical and mental exertion.

Family history negative. Personal history negative except usual childhood diseases. The patient was treated five years ago for neurasthenia and took one rest-cure in a hospital. Her present complaints date back three months and include a history of mental and physical tire, some loss in weight, headaches, especially when she reads, poor appetite and indigestion.

The patient was a tall, well-nourished girl, high cheek-bones, long chest and abdomen, fair color. Pupils reacted to light and accommodation. Knee-jerks active.

A thorough clinical investigation of this case, including pelvic and rectal examinations, also urine, blood, and gastric studies, was negative for organic disease. No sputum. Wassermann reaction negative. Von Pirquet test positive. Temperature normal with an occasional rise to 99.2 degrees. Pulse 70 to 96. The clinical diagnosis, based on the history of physical findings was neurasthenia with astigmatism (Macnie).

On the thirty-first day after admission, patient was given subcutaneously 2 mgms. of Koch's old tuberculin, with a typical positive reaction (temperature rising to 101.2 degrees) within seventeen hours after the injection of tuberculin (see

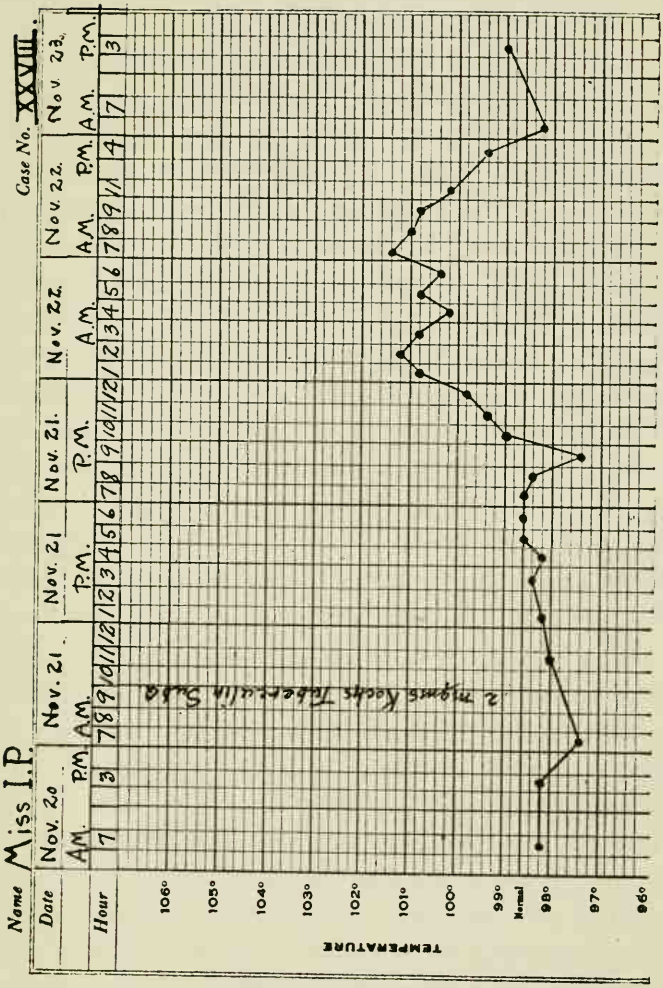

Case No. XXVIII.
Name Miss I.P.
Date
Hour
TEMPERATURE
Normal
2 mgms Koch's Tuberculin Subc.

chart on preceding page). The diagnosis of neurasthenia was then abandoned.

The long history of exhaustion-symptoms and the positive tuberculin reactions in the absence of evidence of other organic disease justified the diagnosis of concealed tuberculosis, focus not determined, with chronic tuberculous toxæmia. This patient was not kept under observation.

Case XXIX.[1]—Miss E. G., aged sixteen, white, Irish, single, referred to the University Hospital Sept. 22, 1913, complaining of loss in weight, poor appetite, headaches, amenorrhea, and insomnia. Family history negative. Father, mother and ten brothers and sisters living and well; one sister has a goiter. The patient had whooping-cough, measles, mumps, and chicken-pox as a child. Enlarged cervical glands of neck at eight years of age which were operated on and removed.

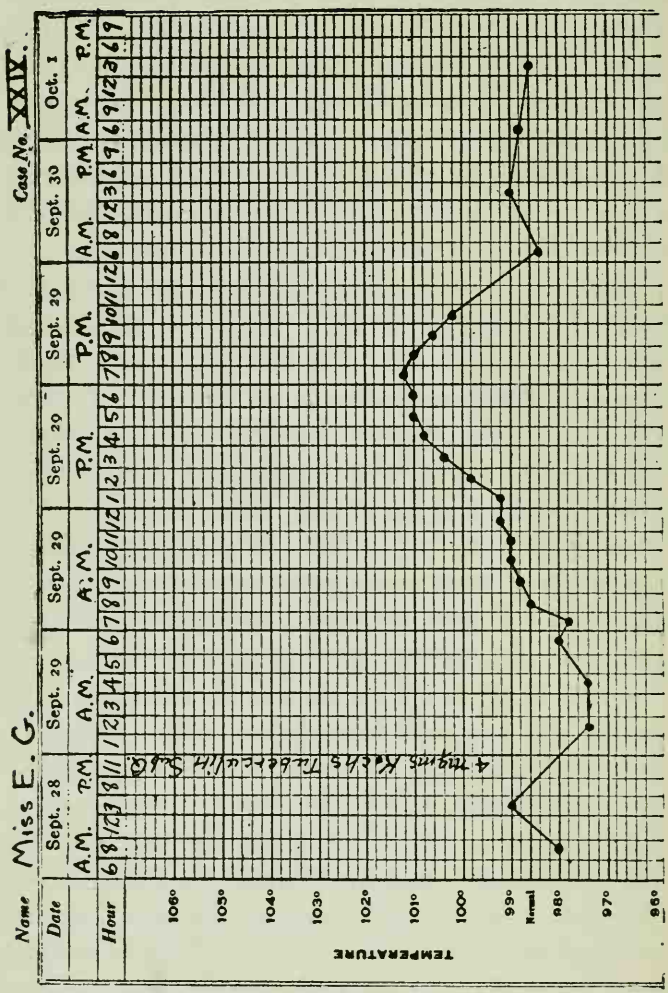
The girl was fairly well until last April. She was studying hard at school and began having afternoon headaches. Aching would come on in the eyes and she would have to stop studying because of the eye-ache. She was fitted with glasses but without relief. About this time she began having indigestion and was troubled with constipation. Finally she had to go to bed and was in bed eight weeks because of weakness and headaches. She was also bothered with pains in her arms and legs, interpreted as neuralgic in character.

[1] Abstracted J. A. M. A. Vol. LXIII, pp. 996–1001.

In June she felt a little better but was tired and weak. Her appetite began to fail, and she lost weight. In July the headaches started again, diffuse over the whole head. These have kept on up to the present time. She is bothered with pain at her menstrual period, which continues for one day after the flow starts. She has come to the hospital because of her headaches and weakness.

The patient was a fairly well-developed girl of sixteen years, with dark hair and eyes, rounded, full face, normal chest and abdomen. Color good. Pupils reacted promptly to light. Knee-jerks present. Marked tremor of eyelids with eyes closed. She seemed nervous and high-strung. Took deep breaths. Moved her limbs from side to side. Answered questions in a low voice. Had a slight dry cough. Teeth fairly good. Old scars of operation on left side of neck, also a few pea-sized palpable lymph-nodes.

A searching physical examination of this case revealed no evidence of organic disease outside of an area of impaired resonance in the upper right chest posteriorly. No râles heard in this area. Slight increase of vocal fremitus. A soft blowing systolic murmur was heard over the second left intercostal space and, on exertion, a soft systolic bruit was heard in the apex area which promptly disappeared on rest in bed. Blood examination negative. Blood-pressure 110 systolic. Pulse 80 to 120. Temperature normal. Wassermann test


Name Miss E. G.
Case No. XXIX.
Date
Hour
Sept. 28
Sept. 29
Sept. 30
Oct. 1
A.M.
P.M.
TEMPERATURE
106°
105°
104°
103°
102°
101°
100°
99°
98°
97°
96°
Normal
4 trains Koch's Tubercolin Given

negative. Von Pirquet test positive. Urine—specific gravity 1026, no albumen, no sugar, an occasional hyaline cast. Negative X-ray findings. The history, and the absence of evidence of well-defined organic disease led to the diagnosis of neurasthenia (so-called).

On the seventh day after admission the patient was given 4 mgms. of Koch's old tuberculin subcutaneously and gave a typical positive reaction (temperature 101 degrees) within sixteen hours following the injection, (see chart on preceding page).

The diagnosis of neurasthenia was then abandoned. The history of diseased glands in the neck in childhood, the negative Roentgen-ray chest findings, the positive tuberculin reactions, justified the diagnosis of tuberculosis, focus not determined, with chronic tuberculous toxæmia causing symptoms of nervous and physical exhaustion.

Case XXX.—Mr. David G. Case No. 5914. Examined November 10, 1913. Aged thirty-five years, married, police operator. Family history negative. Always well and strong up until ten months ago when he began to have pain in the upper abdomen associated with indigestion and formation of gas after eating. A diagnosis of ulcer of the stomach was made and the patient was operated on three months ago. No ulcer found. The patient has been much worse since the operation. His gastric distress was still as bad as before. He

now feels weak and, in spite of a good appetite, is not gaining strength. Whenever his stomach balloons-up with gas, he feels his heart pounding. This is worse at night. No vomiting, no cough. Some loss in weight since the operation.

The patient was a big, heavy man weighing two hundred and ten pounds. A careful physical examination was negative for organic disease, except a pleural friction-rub heard in the left lower chest just above the diaphragm. This remained fixed on repeated examinations. Urine negative. Temperature 98.6 degrees. Subcutaneous tuberculin test (5 mgms. of Koch's old tuberculin) positive, temperature rising to 102.8 degrees within twelve hours following the injection. The diagnosis of tuberculosis of the left lower parietal and diaphragmatic pleura, with pain referred into the upper abdomen due to irritation of lower intercostal nerves, was made. He was placed under dietetic management, which corrected the gastric fermentation and gave him marked relief.

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